transported with the tides to mudflats, tidal wetlands, shallow streams and inlets along the western and upstream along the North Bay. Potential impact to San Pablo Bay intertidal mudflats from sediment loads is recognized in the discussion on page 4-38. Potential impacts due to increased sedimentation of intertidal mudflats, tidal marshes, bays, creeks and sloughs resulting from deposition of suspended sediments disposed of at the San Pablo Bay site should also be recognized and addressed here. Many creeks in the vicinity of disposal sites, including Gallinas, Novato, and the Petaluma River, must be dredged relatively frequently. Discuss how much of this dredging could be resulting from sediment from disposal projects? The discussion should address potential impacts on endangered clapper rails, which reside in these tidal marshes. 18f

Column 2: It is acknowledged at the end of the first paragraph that the effects of disposal could be significant if the frequency of disposal approaches the amount of time it takes for DO levels to return to background? How frequent would these disposal events have to be to reach this condition? What is the length of time disposal scenarios usually lasts for a typical dredging project or range of dredging amounts? 18g

Estimates of the length of time it takes for the turbid plume to return to near background is 15 to 20 minutes, (page 4-29), and return for elevated concentrations of cadmium, lead and copper to dissipate less than 1.5 hours (page 4-32). Considering that chlorinated hydrocarbons return to background within 30 minutes (p. 4-33). Since cost considerations dictate that as many scows are filled as quickly as possible, it seems that there might be a continuous or almost continuous string of disposal over days or even weeks. What would be the impact of this? How long would it take to kill slow moving organisms that might be subject to disposal plumes? 18h

4.3.2.2, page 4-66: Water Quality. How is the assumption made that water quality in San Pablo Bay will be only marginally affected by disposal events? How can it be presumed that disposal events are much less frequent than the time it takes a disposal sediment plume to fully diffuse? How frequently do disposal events occur at the San Pablo site and how long would they typically last? Furthermore, water quality is affected by the constituents in the material disposed. We understand that this site is now being used for materials dredged from locations south of the disposal site. This means material with constituents quite different than those originating in San Pablo Bay marshes might be deposited and consequently transported through the North Bay. Discuss the potential impacts of depositing material from other parts of the Bay? Is there attempt to ensure sediment quality matches that of the North Bay? 18i

Page 4-68: San Pablo Bay, Wildlife Resources. Most of the species identified under South Bay on page 4-84 also exist in the North Bay or San Pablo Bay (Grebes, Terns, Stilts, Herons, Stilts, White Pelicans, Western Sandpiper, etc.). These species should be addressed in the San Pablo Bay section. 18j

There is no discussion of potential impacts to migratory waterfowl. The discussion of wildlife impacts should address potential impacts of the disposal of dredged material at the two North Bay sites on migratory diving ducks that overwinter in the Bay. Of particular concern are Canvasback, and Scaup. The North Bay is the primary overwintering habitat for these species. How could disposal of dredged material impact these and other diving birds finding food? 18k

4.4.1, page 4-88: Upland/Wetland Reuse Environment Setting. The combining of these two different disposal environments contributes to confusion about habitat values on diked baylands. It would be much more clear to discuss these separately. There are seasonal wetlands on all diked baylands, therefore, this cannot be considered an upland disposal site. Reuse on true 18l

18l uplands would have far fewer impacts. Also, other options exist where material could be disposed of on sites where there are no wetlands.

18m 4.4.1.1, page 4-97, column 2, first paragraph: It states that some habitat types provide local benefits while others may provide benefits on a regional, national or international level. It is unclear what habitats are intended to fit under these different categories, but it must be recognized that any habitats that provide for a life cycle function for individuals of a migratory species that reside during some part of the year in another country is of international importance.

Also, regarding the last paragraph, oat hay is the only crop we know of that grows on North Bay diked baylands near San Pablo Bay. Also, oat hay is not a grain it is a filler for cattle food.

18n 4.4.2, page 4-99: **Diked Historic Baylands.** In addition to the descriptions provided in this section, it should also be noted that these lands have soils characteristic of wetlands and that most, if not all, pond water in some sections even with regular pumping. Also, these shallow seasonal wetlands do not just support "some shorebirds" they are important high tide refuge habitat for shorebirds.

18o Page 4-101: Palustrine Wetlands are the wetland type that exist on the diked historic baylands. They include diked baylands in Sonoma and Marin Counties. Palustrine Seasonal wtlands on diked historic baylands are shallow and sparsely vegetation or unvegetated. This is the type of wetlands the shorebirds use. Their strategy is to roost in flocks so they can have more protection in numbers and more eyes to see predators coming. Other species, such as raptors and waterfowl birds that also use open habitats such these, also use diked baylands. It should also be noted that tidal marshes do not provide these habitat functions. The importance of the lack of vegetation to shorebird roosting habitat should be included. The discussions should clarify the category in which seasonal wetlands fit.

18p Table 4.4.1, pages 4-103 to 4-107: This table needs several revisions. It should include seasonal wetlands as a habitat type. Salt Marsh Harvest Mice would be identified as using this habitat. It should also show that Salt Marsh Harvest Mice use adjacent uplands for high water refuge habitat and non-tidal wetlands, and that CA Clapper Rail and Black Rail also use adjacent uplands for high tide refuge. So far as we are aware, the CA Brown Pelican is still an endangered species and, therefore, cannot be identified as common.

18q 4.4.2.1: page 4-108: The third paragraph on this page identifies three species that are not identified on Table 4.4.1, California Gull, Long-billed Curlew and Short-eared Owl.

The discussion should also address migratory species that use the diked baylands/seasonal wetlands.

18r 4.4.3, page 4-119: A capacity estimate for true upland reuse should be included. This would include landfills and other uplands. Ignoring this information could lead one to believe that it is not being considered seriously and will not be pursued.

18s Table 4.4-4 should be revised to delete Leonard Ranch.

18t 4.4.3.5, page 4-121: Upland/Wetland Reuse Scenario Estimates. What would the difference be in the amount of material reused if some seasonal wetlands, say half, were created on the diked baylands instead of tidal wetlands? This should mean that more material could be used to raise the lands higher.

18u 4.4.4.1, page 4-123: Habitat Restoration. Both scenarios for dealing with

mitigation for seasonal wetland losses, as identified in the first paragraph of column two, are unacceptable. Dealing with mitigation on a case by case basis would not be effective because there is no policy guidance in this document to ensure that there would be adequate environmental review or to compel applicants to do mitigation. It is virtually impossible to ensure that habitat restoration projects are consistent with all regional habitat plans, nor is it appropriate or acceptable to commit to consistency with plans that are not even completed. Until these plans are developed and subjected to review, it is not at all clear that they would be consistent with each other or that all would be in the interest of wildlife. A superior approach is, in fact, to commit in this document to doing an EIR for each individual wetland reuse project, and to mitigate all wetland losses, at least until a Wetlands Management Plan based on Wetland Habitat Goals has been developed, adequately reviewed and been found acceptable. 18u

Habitat Restoration - General Siting Criteria. With regard to the last sentence in paragraph three, second column, there has also been a reduction in seasonal wetlands and adjacent upland during the same period that tidal wetlands have been lost. So the correlation with reductions in wildlife populations should encompass all of these related habitats. Most wildlife species need more than just tidal marsh to be sustained. Even our two major marsh dependent endangered species need associated upland for refuge during high tides. Most shorebird species do not even use tidal wetlands, but forage on intertidal mudflats at low tide and roost on seasonal wetlands and uplands nearby unvegetated uplands. 18v

Figure 4.4-4: A major flaw in the design for the Sonoma Baylands project, that should not be repeated in other such projects is the location of an extremely wide road, and public access path between the tidal marsh and created seasonal wetlands which is clearly shown in this figure. 18w

4.4.4.1, page 4-125: The establishment of restoration goals as recommended in the first paragraph is only one component needed to improve the success of such projects. Other components include a technically valid restoration plan, and an adequate monitoring plan that will document whether the restoration goals are met and ensure that any defects are corrected. 18x

The listing of functions for which it is recommended wetland restoration projects be evaluated include many important components. The list should also include wildlife habitat under which the wildlife species using the wetlands and for what life cycle functions should also be identified.

The statement in the last paragraph of the first column "While this conversion reflects the historical distribution of tidal marshes...." may be literally correct, but it ignores functions provided historically by adjacent uplands and seasonal wetlands that are now not available for wildlife because they are developed. Current seasonal wetlands may now provide functions once provided by these historic upland habitats. 18y

The analysis of seasonal wetland functions in paragraph one, second column is accurate. However, data demonstrating the validity of the statement that "A scheduled restoration approach for tidal wetland habitat creation would create habitat which could augment many seasonal wetland habitat functions, since many of the functions of the seasonal wetlands can also exist within mature or maturing tidal wetlands" does not exist. This statement refers to unvegetated areas or ponds that historically existed within expanses of tidal marsh. 18z

To our knowledge, wetland ponds within tidal marshes exists today in only a few locations. However, to count on these tidal marsh ponds to provide high tide roosting habitat for thousands of shorebirds and foraging habitat for waterfowl is insupportable at this time. There has been no study to demonstrate wildlife use of the existing ponds. Further, there is no evidence

such ponds can be created. One or more demonstration projects should be implemented. There should be a commitment to create seasonal wetlands, along with tidal wetlands, to compensate for seasonal wetland loss until it has been demonstrated that the ponds within tidal marsh would serve the same habitat functions as seasonal wetlands and that they can be successfully created.

18aa | 4.4.4.2, page 4-129: Habitat Restoration. Table 4.4-8, Summary Matrix: The identified impact, habitat conversion, is not associated with upland/wetland reuse but with wetland reuse. Many types of upland reuse, such as landfill cover and construction use, would likely not have habitat conversion impacts.

18bb | Page 4-135, second column, third paragraph: Special Status Species. As suggested in the last sentence, "policy-level mitigation measures could be implemented to reduce the potential of adverse impacts to species of special concern...." We recommend that policy level mitigation measures be required to mitigate impacts to special status species from use of dredged material for levee stabilization, as well as for seasonal wetland loss.

18cc | 4.4.4.3, page 4-137: Rehandling Facilities. Any sites that contain seasonal wetlands or other habitats not only <u>may</u> require mitigation but <u>should</u> require mitigation. This sentence should be changed accordingly.

18dd | Page 4-138: As stated, construction of rehandling facilities in diked baylands could result in potentially significant habitat conversion impacts, and the loss of seasonal wetlands could be reduced through careful site selection minimizing impacts associated with habitat function losses. We support implementing these actions. However, it would be extremely difficult and probably impossible to use a site with seasonal wetlands and avoid those wetlands. Therefore, this discuss should be revised to include a commitment to mitigate the any wetland type that is lost by constructing rehandling facilities.

18ee | 4.5.3.6, page 4-160: No supporting information is provided as to why impacts to mid-water organisms, such as juvenile rockfish, are expected to be insignificant.

18ff | 4.5.4.1, page 4-161, first paragraph: The discussion of the fate of dredged material on the ocean environment states that through monitoring the estimate of the amount of material reaching the sea floor, is between 60 and 83 percent which is higher than previously predicted. What was the original estimate? How large an area of the ocean floor has actually been impacted or covered by dredged material? What is the long-term implication of this increase on the ocean habitat? How much more habitat would be expected to be covered after 10 years of disposal, 20 and 50 years disposal?

18gg | 4.6.3.4, page 4-171, first full paragraph: It should be pointed out that costs to government for site preparation, engineering, planning, etc. represent a cost to the public through taxes and are a subsidy to dredgers.

18hh | Column two, second paragraph: It should also be pointed out that a major factor in determining monitoring programs, at least judging from Sonoma Baylands, is not the "type of site" but the amount of funding available. How can this problem be avoided in the future?

19 | CHAPTER 5 POLICY LEVEL MITIGATION MEASURES AND ALTERNATIVES DEVELOPMENT

5.1.1.1 The general policies address evaluation of disposal proposals, contaminant exposure pathways, appropriate design or operational features to control contaminants and use of only suitable material. The discussion rightfully recognizes that all potential impacts cannot be avoided entirely at
19a | all sites. We are concerned that pressure to dredge and dispose of material

may result in relaxation of criteria. What measures will ensure that agency suitability and quantity criteria will not be gradually weakened if there is pressure for either a dredge project or restoration option? 19a

5.1.1.2 We support providing opportunity for public comment while developing site monitoring and management plans. The process through which public input would be obtained should be stated. How would it be assured that public input would be a meaningful part of the process and not just window dressing? 19b

5.1.1.3 An essential part of the LTMS process should be to ensure that no "unnecessary" dredging will occur, however, the two policies cited to address this issue are insufficient and inadequate. The process for ensuring only "necessary" dredging occurs should be made in a public forum, not behind closed doors. Specific policy guidelines should be developed to ensure projects are not approved in areas of high sedimentation. Another charge should be to investigate and identify areas where consolation of uses that require dredging can occur and to develop policies that encourage consolidation and termination of "unnecessary" dredging. 19c

5.1.2.1 Upland habitat Conversion Associated with Restoration Projects. This discussion should recognize and address that dredged material can be used to restore seasonal wetlands and not just to restore tidal wetlands. Tidal wetland habitats include a mosaic of habitats including seasonal wetlands and uplands. There is no need to identify which habitat type is more important. An approach that commits to restoring tidal wetlands, seasonal wetland and upland habitats should be adopted and implemented. All are important to retain the species that depend on the Estuary and to provide for all of the components of a tidal marsh system. As discussed earlier, the Regional Goals process and other planning efforts are not yet completed. It is not appropriate to use goals and plans when no one knows what will be in them. They may even conflict with each other. Some are not even being developed with a goal of providing for wildlife habitat needs of wildlife. 19d

Committing to plans that are currently unknown has other problems. There may not be adequate biological information upon which to make habitat recommendations for the next 50 years. Nor has it yet been demonstrated that restoration projects can restore wetlands using dredged material with the degree of certainty necessary to justify encouraging habitat enhancement and restoration using dredged sediments. One or more demonstration projects showing successful habitat restoration are needed before commitment is made to wetland restoration as the major solution to the dredged sediment disposal problem. A commitment to support independent habitat restoration projects in advance is risky because such projects, even if out of the planning area, may destroy important habitat.

5.1.2.2: In-Bay Fish Habitat Conservation. Other runs of salmon and other native species, Delta Smelt, Sacramento Splittail, Green Sturgeon, and Starry Flounder, should also be included on the Appendix J Tables and addressed in this section. Disposal should be timed to avoid impact to these species along with those already addressed. The issue of having no window of opportunity for dredging should not be addressed by ignoring these species and potential impacts to them, as seems to be the current approach. The issue should be addressed by acknowledging the potential problem and identifying the least environmentally damaging period for disposal. 19e

5.1.3, page 5-8, first full sentence: Mitigation Measures Applicable to Specific Types of Projects or Facilities. Stating that "A complete environmental review of proposed projects and facilities is necessary to evaluate these potential impacts of specific sites" is not adequate. What does a complete environmental review mean? To some, it could mean a Negative Declaration. The commitment should be made to doing an EIR for each project, in addition to adopting a policy requiring mitigation for wetland losses on a 19f

19f case by case basis until another plan is developed as discussed elsewhere.

19g 5.1.3.2. Wetland Restoration. Committing to a general policy of addressing issues identified in Table 5.1.2 and other tables (5.1.3, 5.1.4, 5.1.5) that address Overall Guidance for rehandling and various disposal options is not adequate because these tables have major deficiencies. The tables should include requirements to provide information about existing current habitats, wetlands, and species use that should be considered as part of the evaluation of site suitability. Project review should also assess functions provided by existing habitats, and address why the particular site is less environmentally damaging than others. Program level mitigation measures should be identified as a category of information required. Model Mitigation and Monitoring plans, or at least a listing of issues that would be addressed, should be developed and presented with this EIS/R.

Avoidance should be identified as the first tier for review. How avoidance would this be evaluated should be defined. It is not sufficient to leave mitigation essentially unaddressed by leaving it in the hands of permitting agencies. Further, guidance should be developed to define an adequate mitigation and monitoring plan. The guidance should identify requirements for restoring seasonal wetlands and upland components on-site along with any tidal marsh restoration.

19h 5.1.3.3: **Confined Aquatic Disposal.** As with the above discussions, existing species use and habitats should be addressed. For this category, it is essential that not just on-site habitats be addressed but that adjacent habitats and wildlife uses be described because impacts of disposal could go beyond the site itself. Model Monitoring and Mitigation plans should be required here.

19i 5.1.3.4: **Levee Reuse.** Levee Restoration in many instances would impact wetlands that have developed on or adjacent to the levees. Levee habitat is vital for some species such as Song Sparrow. Existing habitats and species that use these habitats should be identified and habitat restoration included as part of proposed projects as with other reuse options above. Model mitigation and monitoring plans should be addressed as above.

19j 5.2.1: Alternatives Development. An adequate discussion of the disposal of dredged material must address the amount of material dredged. While it is unrealistic to consider that dredging would be eliminated altogether, it is not unrealistic, but in fact it is essential, that an option - to not increase and to decrease wherever possible - be included as a component of the overall LTMS program. The discussion should include a review of this alternative.

19k 5.2.3 **Preliminary Alternatives.** We strongly disagree with the second sentence which states that policy-level mitigation measures would effectively mitigate and minimize many of the environmental impacts. As discussed earlier, there is no effective mitigation for loss of seasonal wetlands. One cannot simply point to a vague and undefined set of plans that are in the process of being developed or to a promise of case by case review, and one that does not even commit to doing an EIR much less.

19l 5.2.3.1 An important characteristic that is identified for each of the alternatives is whether or not it would facilitate the beneficial reuse of dredged material. However, "beneficial" is never really defined. A major flaw with the analysis is that it focuses on the desirability of beneficial reuse but neglects to address potential impacts. The authors' assumption appears to be that adverse impacts need not be identified or considered as long as there are identifiable benefits. Or perhaps the assumption is that the benefits cancel out impacts. Neither is not the case. Benefits should be identified, and this does not justify ignoring impacts. Inherent in this 'denial' approach is the failure to provide an adequate strategy to evaluate

impacts in relation to benefits. 19l

Tables 5.2.2 through 5.2.7, pages 5-20 through 5-23: Habitat conversion is identified as a mitigation measure for Upland/Wetland Reuse. Quite to the contrary habitat conversion should be identified as an impact requiring mitigation. These tables should also identify other potential impacts needing mitigation. 19m

CHAPTER 6 ENVIRONMENTAL CONSEQUENCES 20

6.1: Generic Analysis states "In most cases, significant adverse environmental impacts would be avoided under any of the action alternatives, based on application of existing state and federal laws and regulations, and the policy-level mitigation measures described in Chapter 5." We strongly disagree with this statement. State and federal laws regulate impacts to resources, they do not guarantee the avoidance or even the mitigation of adverse impacts. And there is currently pressure to further weaken these laws. Also, as mentioned earlier, the policy level mitigation measures discussed in this EIS/R are insufficient to avoid or assure impacts would be mitigated. With mitigation left to be dealt with on case by case basis, it would be anticipated that little or no mitigation would actually occur. As with Sonoma Baylands, applicants would likely want to avoid the bother and possible extra costs which they could get away with by claiming benefits because there is no policy or program to provided the support. 20a

Also, the attempt would be made to claim that the adverse impacts are localized and not cumulative. And, there is no cumulative analysis in this document to cite to the contrary. The discussion should give some overall analysis of how much seasonal wetland acreage could be lost under each of the alternatives.

6.1.1: **Ocean Disposal.** What provision is there to assure barges are not dumped prior to getting to the disposal site? Are there any time restrictions on ocean dumping? How does this affect the potential number of barges dumped as discussed on page 6-3? How long does it take for disposal plumes to dissipate based on monitoring of ocean dumping that is now taking place? 20b

6.1.1.2: **In-Bay Disposal.** Provide supporting data for the statement in the third sentence that adverse changes to dissolved pollution levels, ammonia sulfides and suspended solids and turbidity tend to be restricted to the imitated vicinity of the disposal plume. Material dumped is transported upstream and downstream where it is deposited, along with its pollutant loads, in adjacent tributaries and marshes. This is of particular concern in the North Bay. 20c

As addressed earlier, there are potentially significant impacts to the disposal at Alcatraz that are not addressed in this discussion. As mentioned earlier, potential impacts to the nesting birds from the loss of a food source due to fish kills or avoidance of dumping an estimated three bargeloads per day should be addressed. Also, we repeat our concern that potential adverse impacts from disposal at San Pablo site are given short shrift. Although it is mentioned that a reduction in overall in-Bay disposal, such as would occur under several alternatives, would allow for the possibility of reducing monthly site limits at Carquinez, there is not even a mention of reducing disposal at San Pablo site.

The discussion indicates that direct or cumulative impacts from using the San Pablo Bay site are not considered to be a problem because the total annual disposal capacity is only 500,000 cy. This conclusion appears to have been made without study. There are small creeks (Novato, Gallinas and Miller Creeks), with populations of Clapper Rail, that have to be dredged on a regular basis. How much does disposal at the San Pablo site contribute to the

20c need for frequent dredging of these sites? Is material dredged from all parts of the Bay allowed to be dumped at San Pablo Bay site or is there restriction on dredging locations? We request for Alternative C that termination of all disposal at San Pablo and Carquinez be considered as an eventual goal.

20d 6.1.1.3: Disposal at Upland/Wetland Reuse Sites. While we agree with the third sentence, i.e. that the potential benefits, whether and how potential adverse effects can be avoided, or minimized for each project, can only be determined on a case by case basis, policy or program level measures and guidelines can and should be addressed in this EIS/R. To ensure that there is adequate review and that the federal sequencing program is followed at the case by case level, there must be analysis of impacts in this EIS/R and a program-level policy developed that guarantees mitigation for wetland losses, and for other adverse impacts as well.

The disposal at upland and wetland reuse sites for habitat restoration is quite different, as is the potential for adverse impacts for each of the disposal modes. More attention and effort must be concentrated on true upland disposal. As mentioned above, the potential for using true upland areas on closing military bases seems to present a previously not considered opportunity. Material could be placed on already paved areas which can then be developed over. Use of landfills should also be addressed in more depth.

How many acres of diked baylands exist in the North Bay? Considering the high and low volume disposal in diked bayland alternatives, generally how much acreage of diked historic bayland would be needed for each of the three alternatives over the next 5 and further 5 yr. increments?

The discussion of habitat restoration on page 6-8 assumes that all of the restoration projects would be successful. It should be noted that a successful demonstration project has yet to be produced.

20e 6.1.2: Fish and Wildlife Habitat. Table 6.1.2 ignores adverse impacts. As noted above, the potential benefits cannot be taken as a given because of the uncertainty of the restoration. Also, it is unclear how the values on this table were determined.

20f 6.1.2.2: **In-Bay Disposal.** As above in section 6.1.1.2, no data is presented to justify the conclusion that the cumulative water quality impacts associated with disposal activities is a lesser potential at the San Pablo Bay site. Sediments can be carried by the tide into tidal marshes, sloughs, and creeks The potential impacts on these wetland habitats and the endangered species that live in them should be recognized and addressed.

Explain why benthic habitats in and near the San Pablo Bay and Carquinez Straits sites are less vulnerable to potential adverse impacts from dredged material? Just because the grain size is fine does not mean that benthic organisms cannot be buried and that increased turbidity would not occur. Also, grain size in the shallow creeks along the Marin County bayfront is fine. Address the potential for cumulative impacts from deposition of contaminants in sediments along the mudflats and in creeks and for bioaccumulation to occur over time.

20g 6.1.2.3: Disposal at Upland/Wetland Reuse Sites. Again upland and wetland reuse sites are lumped together although the potential biological impacts are quite different. The subsequent discussion recognizes that maximizing benefits and minimizing losses of habitat values will be a challenge. It goes on to state the assumption that some degree of trade off will be inevitable, that choices will have to be made about the values of habitat, i.e. between tidal and seasonal wetland, and concludes with a suggested policy-level mitigation (section 5.1.2) that " habitat restoration projects using dredged material must result in an overall net environmental benefit....consistent

with the ...resource management plans for any area."
This approach as inadequate and, therefore, unacceptable. 20g

The policy level mitigation goal should include a component that avoidance should be the preferred maximization of environmental benefits wherever possible, and minimizing and mitigation adverse environmental impacts where avoidance is not possible. A mitigation policy should be discussed in this EIS/R and adopted requiring the creation of seasonal wetland habitat in an equal amount to the acreage of this habitat that would be lost by placing dredged material on the site, and that some amount of upland habitat would also be designed and constructed for each project.

It is clear from the discussion of various alternatives that the greatest amount of adverse impacts to existing wetlands would occur under Alternative C, the same alternative is identified as having the maximum benefits.

Page 6-15: Habitat Restoration. The discussion in the first two paragraphs, of the second column, references avoidance of "relatively sensitive." How are relatively sensitive areas defined? 20h

Levee Maintenance and Stabilization. The discussion seems to recognize that the high salinity of dredged material would result in wildlife habitat impacts. Specifically, there may be less or no riparian vegetation that recolonizes the levee banks. This is not justified by an explanation that there would only be 500,000 cy a year placed for levee repair. Either evidence that use of certain amounts of saline material would not result in habitat modifications should be presented, or other mitigations should be developed such as mixing the material or covering with less saline soils to protect existing resources. 20i

6.1.3 Special Status Species - Impacts to endangered Clapper Rail and Salt Marsh Harvest Mouse from dumping at the San Pablo Bay and Carquinez sites are not recognized in the previous discussions. The potential for increased sediment deposits covering or contaminating thorough bioaccumulation food organisms for these species should be addressed. 20j

Table 6.1.3 This discussion gives the highest credit to habitat restoration based on the assumption that all supposed upland/wetland placements to restore habitat would be successful. This table should also include impacts which should count against the benefits for reasons previously stated. 20k

6.1.3.2: In-Bay Disposal. Application of policies common to all alternatives would <u>not</u> ensure that disposal during critical time frames would not occur in the Carquinez or San Pablo Bay sites, as stated in the first paragraph of the second column. This reference should be revised. 20l

We agree with statements in the next paragraph, that the act of dredging itself has the potential to cause adverse impacts to special status species of fish and wildlife and may physically impact important habitats. We do not agree, however, that these potential impacts can simply be dismissed as being evaluated on a project by project basis. Addressing these impacts only on a project-by-project basis is a piecemeal, fragmented and inadequate evaluation of the dredging problem and would not present an overall, accurate picture of the full range of impacts. This overall addressing of the total picture is precisely what should be achieved by doing a Policy EIS/Programmatic EIR and what is required in CEQA and NEPA.

6.1.3.3: Disposal at Upland/Wetland Reuse Sites. A policy should be included guaranteeing that there will be no net loss of special status species habitat and that placement of dredged material in special status species habitat will be avoided wherever possible. 20m

Dredged material should not be placed on an endangered species habitat, even if less environmentally damaging alternatives do not exist, as indicated as a possibility toward the end of the second paragraph of page 6-19. Under no circumstance should the need to get rid of dredged material outweigh the responsibility to protect endangered species. Neither should the goal of some future overall net benefit to the same species justify loss of immediate functioning habitat. At least at this point in time, habitat replacement is not a predictable certainly.

20n | Page 6-20: The statement that rehandling facilities do not need to be located and in fact should not be located in special status species habitat should be expressed clearly in a policy.

20o | Overall Upland/Wetland Reuse Risk/Impact and Benefit Ratings. As discussed earlier, the "substantial benefits" to special status species and their habitats from upland or wetland reuse under any of the three scenarios is potential not certain. Until techniques and designs have been perfected, it cannot be absolutely certain that the desired habitat would be created. Even if it is there would be a time lag. Therefore, the maximum reuse might actually be the most damaging.

In addition, we disagree that the benefit would primarily result from tidal wetland restoration rather than restoration of other kinds of habitats. Special status species also use seasonal wetlands. Hundreds of other species depend on these same habitats. The goal should be to provide the diversity of habitats that together comprise tidal wetland habitat system required by the many resident and migratory species that depend on the estuary.

20p | 6.1.4: Transportation System Comparisons. This discussion should also address use of the rail line that exists along Highway 37 to transport from Mare Island and sites along the route to Redwood Landfill and perhaps other disposal sites to the north.

20q | 6.2: Final Alternatives. We disagree with assessments that upland/wetland reuse placement has only minimal or negligible potential for direct and/or cumulative impacts to wildlife and wildlife habitats. This may be the case if the material is placed at a true upland location, but certainly not at a diked bayland/seasonal wetland particularly without mitigation.

20r | 6.2.1.3, page 6-38: Alternative 3, Risks/Impacts. We strongly disagree that this alternative carries only a negligible risk of cumulative impacts. For many reasons stated above, this alternative carries the most risk of cumulative impacts to water quality, fish, wildlife and wildlife habitat. Furthermore, unless a mitigation policy is included, there will be minimal to no regulatory certainly for applicants.

20s | Page 6-49: A comprehensive set of goals, policies and guidelines might achieve the desired: streamlining. However, there should be an analysis of the advantages of these policies for the bay, wetland and ocean resources.

20t | Page 6-70: The recommended policy is that LTMS Agencies will establish or support sufficient capacity at rehandling facilities and at upland/wetland reuse or disposal sites. We have no problem with true upland sites, but oppose such a commitment for wetland sites without further policy commitment to ensure functions, values and acreage of seasonal wetland and some uplands are retained. Also, we strongly recommend an additional policy be adopted that commits to restoring the habitat types and acreage of wetlands lost and including some upland.

21 | CHAPTER 7 IMPLEMENTATION OF THE SELECTED ALTERNATIVE

21a | 7.0: A draft of the Management Plan should be developed now so public can

comment now. 21a

7.1.3: Improved Regulatory Coordination. The single application form should include information on the endangered and migratory species that could be affected by the project and potential impacts on adjacent wetlands. We concur at least that one important aspect of improving the regulatory system, will be the establishment of one or more rehandling facilities. Another need is for a staff person charged with the responsibility to seek opportunities and do the groundwork for the development of rehandling facilities, and reuse opportunities with emphasis on upland. 21b

7.2.2: Options for Allocation of Disposal Volumes. While we have not been able to fully focus on this aspect, we would like to express several thoughts on the options as presented. A credit system would be very difficult to manage. Should this option be seriously considered, we strongly recommend against giving credit for placement in diked bayland where seasonal wetlands are being filled and not mitigated. Such projects should either not be permitted or should be docked points instead of receiving credits. At this point we would have to say that agency directed placement would be our preferred option, at least until arrangements can be made for the Corps to pay its fair share. We see no reason why they should be exempt from responsibilities other dredgers have. Use of the Harbor Maintenance Trust Fund appears a promising possibility. 21c

7.3.1.6: Wetland Mitigation Banking. We strongly oppose this option. Establishing a mitigation bank for dredged material could result in a net loss of wetlands because a bank could place material over seasonal wetlands and allow for loss of other seasonal wetlands for applicants who buy into it. This would be a double loss. 21d

7.4.1.7: Federal Guidelines for Carrying Out Section 404(b)(1). This discussion suggests that the 404 (b)(1) guidelines be changed to distinguish between fill for development and environmental restoration. We strongly object to this approach. To change this federal program would be unwarranted and irresponsible. It could be extremely destructive to wetlands protection regulation throughout the country by creating another major loophole. Also, simply because a project states its intent as being environmental restoration does not mean that is what the outcome would be. This does not justify changing the 404 guidelines. 21e

CHAPTER 8 CUMULATIVE BENEFITS 22

8.3.1: Habitat Conversion. Recognition of the importance of tidal wetlands is not "newfound." It has been known for some time. This discussion does not recognize the current understanding that wetland habitats are systems that do not simply consist of tidal wetlands. Wetland habitat include mudflats low and high marsh, uplands and seasonal wetlands and in some locations, riparian and other specific kinds of habitat. What is spurring efforts to restore such habitats is the need to get rid of dredged material. This discussion should emphasize the importance of restoration of specific habitat types being determined by habitat needs of native species that depend on the estuary, not by the need to dispose of material. 22a

While the discussion recognizes that the Alternatives would result in loss of seasonal wetlands that provide important habitat functions for widlfie, it dismisses this impact on the basis of policy level mitigations addressed in chapter 5. As mentioned many times earlier, the proposed mitigations are not adequate. And while the creation of tidal wetlands may be a benefit, this does not negate, wipe away or compensate for adverse impacts of the loss of a habitat that provides functions not provided by tidal wetlands. This section should be changed to ensure policies are developed requiring seasonal wetlands to be included as part of the design of all reuse projects on seasonal

22a ↑ wetlands.

23 CHAPTER 10 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

It should be clarified whether "upland" in second column first line, second paragraph, intended to mean true upland or both upland and diked bayland/seasonal wetlands. We recommend that the discussion further down in that paragraph be amended to remove the word "augment" unless the text is changed to add a statement to the effect that existing seasonal wetland habitat functions would be replaced along with creating tidal marsh. Existing habitat functions would not be augmented by changing the habitat type, only by adding complimentary habitats.

24 CHAPTER 11 GROWTH INDUCING IMPACTS

The availability of dredged material and the need for disposal sites could involve private development sites. In fact, Bel Marin Keys, a very controversial project proposed for diked baylands, is listed as a potential disposal site in an LTMS brochure. We strongly recommend that LTMS not become involved in any way in supporting, committing or even appearing to participate in any private development project. This would quickly turn the public against LTMS.

Thank you for considering our concerns.

Sincerely,

Barbara Salzman, Chair
Conservation Committee

Responses to the MAS — Marin Audubon Society, letter dated July 18, 1996

1. Please see the response to OAS comment 7.

2. Statement noted. Seasonal wetland loss is addressed in the Final EIS/EIR. Please see the response to OAS comment 7 for further information on seasonal wetland mitigation at a policy level. Individual environmental impact analyses will need to be conducted on a project-specific basis as mandated by CEQA and NEPA. Appropriate project-specific mitigation would be determined for each proposed project at that time.

3. Statement noted. The LTMS agencies acknowledge that high quality seasonal wetlands should be avoided and, if possible, seasonal wetlands lost through habitat conversion should be mitigated. Also see the responses to OAS comment 7 and SC-LPC comment 4.

4. Statement noted. Please see responses to DOI comments 4, 10a, and 26b.

5. Statement noted. Please see the responses to OAS comment 7 and SC-LPC comment 4.

   Regulatory Certainty, one of the evaluation criteria under which the Final EIS/EIR alternatives are considered, is briefly described in section 2.5 and discussed in detail in section 6.2.2. As noted in those sections, the definition of Regulatory Certainty includes not only certainty for dredging permit applicants, but also for the public concerned about environmental protection.

6. As section 6.1 of the EIS/EIR describes, throughout the evaluations in Chapter 6 the benefits and impacts of dredged material disposal in the three placement environments are described on a relative basis. This EIS/EIR evaluates the alternatives in terms of the relative risk of adverse impacts occurring because, in some cases, it is impossible to quantify potential risks accurately with existing scientific information. For example, the degree of actual adverse impacts to Estuary resources associated with current volumes of in-Bay dredged material disposal is difficult to determine with existing information. The degree of impact resulting from disposal activities under the other alternatives also cannot be precisely quantified.

   Chapter 6 does discuss absolute benefits and impacts where appropriate and where the scientific information exists. Because this document is programmatic rather than project-specific, comparisons of the disposal alternatives on a relative basis is acceptable; a CEQA/NEPA review would be required for any proposed project, and that review would include the identification and evaluation of specific project impacts.

   The LTMS agencies agree that the preferred alternative (Alternative 3) has potential for environmental benefits, but could also result in environmental risks/impacts. This comment identifies the adverse impacts that could result from altering existing seasonal wetland habitat for the restoration of tidal wetlands. The Final EIS/EIR has been revised to ensure that appropriate mitigation measures for the loss of seasonal wetlands are in place. Chapter 5 (section 5.1.2.1) now addresses upland habitat conversion that is associated with restoration projects. In addition, Table 5.1-4 (Overall Guidance for Wetland Restoration) has been revised to include, as a criterion, the evaluation of a proposed restoration project's likelihood of success.

7. Please see the responses to DOI comment 5 and INR comment 3a.

8. All dredging/disposal projects go through a COE public notice, and the DMMO will review both private (permitted) dredging projects as well as COE dredging projects. The COE will also revise its Composite EIS for all federally maintained channels in the Bay Area.

9. The policy-level mitigation measures (Draft EIS/EIR Chapter 5), the management plan, and project-specific reviews provide an opportunity for ensuring that dredging and disposal needs are decreased wherever possible.

10. The LTMS agencies have edited the Final EIS/EIR to address many of the upland reuse issues noted in this comment. Please see the response to DOI comment 13 for a discussion of document edits that should clarify the differences between true upland reuse and the restoration of wetlands. The potential use of closed military bases is discussed in the response to PTG comment 4. The LTMS agencies agree that opportunities for the reuse of dredged material in landfills should be pursued further, as well as other upland reuse opportunities.

11. These are excellent suggestions of issues that should be addressed in the LTMS Management Plan. These items will be considered in the development of the Management Plan, but several of these issues may need to be discussed in separate documents, or even in several different documents to ensure all aspects of the issue are covered.

12. Please see the response to BayKeeper comment 2a.

13. Please see the response to DOC comment 2. Choosing a preferred alternative will give direction and incentive for developing guidelines and upland/wetland reuse sites. Additional NEPA/CEQA documentation and evaluation for beneficial reuse sites would be completed on a project-specific basis and not in the Policy EIS/Programmatic EIR. During the transition to Alternative 3, any additional work necessary to implement the preferred alternative can be conducted and refined. Ultimately, the transition to Alternative 3 — 20 percent in-Bay disposal, 40 percent ocean disposal, and 40 percent upland/wetland reuse — can be realized. We agree that Alternative 3 should not be implemented immediately; a transition to Alternative 3 will allow time to work out the necessary issues.

14. Please see the response to MAS comment 19g.

15. The NEPA criteria for addressing impacts is adhered to within this document. However, this document is a policy EIS/programmatic EIR, and mitigation measures and avoidance are addressed on a policy (i.e., more general) level, not a project-specific level. Policy-level mitigation measures are discussed in Chapter 5. Many of these mitigation measures reflect existing agency requirements, and they ensure that potential adverse impacts will be avoided. Please see the response to Chevron comment 2 for a discussion of the differences between a policy NEPA/CEQA review and a project-specific NEPA/CEQA review.

16. Please see the responses below to MAS comments 16a through 16f.

16a. Please see the response to CCCR comment 9 and EDF comment 1c.

16b. No dredging is anticipated to be continued by the U.S. Navy in view of base closures. The Navy has its own funding for dredging and disposal.

16c. The types of benefits and impacts that could result from the implementation of the management alternatives evaluated are discussed in Chapter 6. Section 6.1 provides information on the impacts and benefits that would be associated with the ocean, in-Bay, and upland/wetland reuse disposal alternatives if implemented. This section of the document contains the identification of specific potential impacts and benefits noted in the comment (e.g., fish and wildlife habitat, water quality impacts).

The Evaluation Criteria (A, B, and C), which are explained in section 2.5, are not used to identify potential impacts and benefits through a traditional project-specific environmental (i.e., CEQA/NEPA) review, but rather to add an additional tier of evaluation for issues particularly important to the LTMS. The Evaluation Criteria were developed after the public was asked to identify dredge disposal issues that are of concern. The Evaluation Criteria are applied to the disposal alternatives in section 6.2 of

this document, and are applied in conjunction with and only after the environmental analysis of the benefits and impacts of the disposal alternatives has been completed.

16d. Please see the response to CCCR comment 9 and EDF comment 1c.

16e. Statement noted. Please see the response to BPC comment 18. Most of these regional plans include a variety of agencies and public interest groups in a collaborative approach to wetland management and regulation.

16f. Please see the response to Gravanis comment 9r(2).

The LTMS would not oppose a restoration project that did not propose to use dredged material, particularly if it was determined that dredged material reuse in some way prevented ecological restoration goals to be met.

17. Please see the responses below to MAS comments 17a through 17j.

17a. The LTMS agencies have focused on five reuse options in particular because they have determined them most feasible for the San Francisco Bay area. These options are feasible due to their ability to accommodate the large quantities of dredged material produced in this region. Section 3.1.1.5 of the Final EIS/EIR lists 10 categories of beneficial reuse that represent a wide variety of options that have been used nationwide. However, section 3.1.1.6 discusses reuse options that have been determined most feasible in the San Francisco Bay area. These options include wetland restoration, levee repair and rehabilitation, landfill reuse, rehandling and confined disposal facilities, and construction purposes. All five of these reuse options have been the focus of the LTMS agencies' efforts. The other options listed in section 3.1.1.5 may be very feasible on a project-by-project basis for smaller volumes of dredged material.

17b. Statement noted. Please see the responses to DOI comments 13 and 25h, and BPC comment 18.

17c. Throughout Chapter 4 of the EIS/EIR, it is acknowledged that dredged material disposal is a source of suspended sediments in the Bay. However the amount of suspended sediments contributed by dredged material disposal is a small percentage of the total amount of sediment suspended and resuspended in the Bay.

17d. Please see Chapter 3. The potential for bioaccumulation is directly evaluated in sediment testing whenever needed, as an indicator of bioavailability. Dredged material is NUAD if testing indicates unacceptably high bioaccumulation potential for the disposal site. Also, the EIS/EIR programmatically considers bioavailability in the evaluation of risks. Specifically, in-Bay disposal at dispersive sites maximizes exposure (although at diluted concentrations) of organisms to potentially bioavailable contaminants and is an important reason that in-Bay disposal should be reduced.

Bioaccumulation testing of in-Bay dredged material (under PN 93-2) is conducted only on occasion; in contrast, bioaccumulation testing of sediment proposed for placement at the ocean disposal site is conducted more frequently. The RIM will help to standardize testing in the Bay area.

Also, please see the responses to DOI comment 26b and UA comment 3.

17e. Section 3.2.4 of the Final EIS/EIR contains information on the contaminant exposure pathways and potential risks in placement environments. In this section, the exposure pathways in aquatic (i.e., ocean and in-Bay disposal), upland (i.e., no tidal action at the site), and nearshore placement environments (i.e., diked historic baylands or diked baylands that have been restored to tidal action) are discussed. The text in this section of the document has been edited to clarify upland versus wetland placement environments.

Sections 3.2.4.4 and 3.2.4.5 discuss the management approaches that would be taken to control any water quality impacts as a result of dredged material disposal. The comment questions if there are projects where contaminated materials have been successfully confined in aquatic locations. The successful confinement of contaminated dredged materials in aquatic environments (i.e., CAD in-Bay and ocean sites) are discussed in the response to MAS comment 17j and SC-LPC comment 3f. Confinement of contaminated materials in wetland restoration sites is discussed in the response to DOI comment 10a.

17f. Please see the response to DOC comment 5.

17g. The comment is concerned that the practice of compositing sediment samples from an area into a smaller number of samples for testing purposes (mentioned in section 3.2.5.1 of the Draft EIS/EIR, page 3-82) could have the effect of diluting some contaminants.

Composite sampling is appropriate for sediments if the objective of the testing program is to evaluate aquatic disposal.

In a broad sense, the answer to the question depends upon the objectives of the testing program. A sampling program for any medium must be designed to fulfill the objectives of the work. If the purpose of sampling is to characterize the sediments as they rest in the Bay, then discrete samples of just the upper few inches of material would be appropriate (the biotic layer). This is similar to the strategy employed by the Regional Board in the Bay Protection Program for identifying contaminated areas. On the other hand, if the purpose of testing sediment is to characterize the sediment for disposal in the aquatic environment at a "dispersive" disposal site, then a larger sample unit, comprised of several cores, or a "composite" is appropriate.

Sampling unit in this context refers to both the lateral extent as well as the depth (dredging prism). This is because the dredging activity itself will tend to homogenize sediment across an area and with depth. Once in the barge, some mixing of the sediment will again occur during transit to the disposal site. Finally, when dumped at the aquatic site, the material will fall to the bottom and intermingle with other recently disposed material. Therefore, it is more important to know the *overall* nature of the in-place material rather than the character of smaller isolated areas or pockets. However, we know that sediment contamination can be heterogeneous so this question brings up an important consideration in the testing process: when a sample shows elevated levels of pollution or toxicity, then the next step is to determine whether the problem is one that is wide-spread (with respect to the project area), or whether there are even higher levels at some of the individual core locations ("hot spots"). Hence, all applicants are required to run tests on archived core samples if elevated chemical contaminants are detected in the composites. Applicants are also required to retest the site at a higher sampling resolution to determine the actual lateral and vertical extent of contamination within the problem area.

17h. The U.S. Army Waterways Experiment Station (WES) has applied the COE's Management Strategy for Disposal of Dredged Material (Francingues et al. 1985; Lee et al. 1991) to many dredging projects in which sediment is tested and evaluated for potential disposal environments, including aquatic, upland, and wetland. Test protocols are used in both upland and wetland sites to determine the potential for migration of contaminants into effluent, surface runoff, leachates, plants, and animals. This strategy has been used in many dredging projects such as the following: Black Rock Harbor, Connecticut; Everett Homeport Project, Washington; Oakland Harbor and Richmond Harbor, California; and various wetland sites in the Netherlands and Portugal.

Test protocols for upland/wetland disposal sites include the following:

- Effluent testing to determine the water quality discharged from an upland/wetland disposal site;
- A rainfall simulator lysimeter (able to duplicate the raindrop size and actual velocities of natural rainfall) test to predict surface runoff water quality from an upland site;

- Aerobic and anaerobic leachate tests to analyze for heavy metal and butyltin concentrations, pH, conductivity, permeability, etc.;
- Plant bioassay tests to determine uptake of contaminants by upland/wetland plant species; and
- Animal tests such as earthworm bioassay tests to evaluate the potential toxicity or mobility of contaminants to soil invertebrates colonizing the sediment or soil in an upland environment.

Results of these tests can help determine what restrictions (e.g., recondition dredge material to remove salt before placement, manage plant colonization in certain areas, etc.) need to be placed on disposal of dredged material at an upland or wetland site to minimize the impacts to the surrounding environment.

17i. Statement noted. The LTMS agencies acknowledge that this is a valid concern. However, both federal and state legislation that guides the LTMS agencies in their regulatory activities, as well as the public review process (see the response to MAS comment 19a) will prevent the weakening of environmental protection due to streamlining efforts. These streamlining options, and others that may be identified in the future, would be implemented through the LTMS Management Plan, discussed in Chapter 7. More detail on streamlining options and the control mechanisms available to prevent any deterioration in environmental protection will be discussed in that document.

17j. Appendix G briefly notes locations where CAD projects have been constructed, and the USACE/EPA joint guidance document, "Guidance for Subaqueous Dredged Material Capping" (Palermo et al., in preparation) gives more detailed descriptions of CAD projects. Appendix G was prepared to provide considerations for the San Francisco Bay area, based on the experience with CAD projects gained elsewhere. However, note that specific issues for any site must be addressed on a project-specific basis, as required in section 5.1.3.3 and Table 5.1-4 (Policy-Level Mitigation Measures).

18. Please see the responses below to MAS's specific comments 18a through 18z and 18aa through 18hh.

18a. Statement noted. Text has been changed accordingly.

18b. Appendix I of the Draft EIS/EIR contains information that indicates that California and western gulls use a variety of habitat types, including salt ponds.

Statement noted. Salt ponds and levees provide different, yet still important, habitat functions than those provided by tidal marsh habitat. However, as section 4.3.1.4 of the EIS/EIR states, tidal marsh habitat provides very diverse habitat functions, and thus provides valuable habitat for a great variety of estuary species. The protection of marsh habitats is extremely valuable to the continued health of the Estuary because the decline of marsh habitats is one of the many factors associated with the increased stress on the entire Estuary ecosystem.

18c. Table J-2 is now superseded by Table J-3 which has been revised for the Final EIS/EIR through further discussion with the USFWS, NMFS, and CDFG. Delta smelt and Sacramento splittail have been added to Table J-3. Green sturgeon is not addressed in the table at this time because it is believed to be gone from the Estuary. The table has also been changed so it is no longer specific to *winter-run* chinook salmon. NMFS believes that the indicated "window" along with the Permit and Consultation Requirements will be protective of chinook salmon. This table will be updated in the future through the formal review cycle for the Management Plan or as necessary. Please see the new description of the transition to Alternative 3 (section 6.5) and the response to DOI comment 5.

18d. In reference to section 4.3.2.1 (Draft EIS/EIR page 4-57, discussion of Central Bay), the comment states that eelgrass beds are sensitive to the disposal of dredged material, and that Figure 4.3-10 shows the largest, of a total of only three, eelgrass beds in the Bay as being offshore Richmond in San Pablo Bay near the San Pablo Bay disposal site. Statement noted. Text has been changed accordingly.

Figure 4.3-10 shows locations of existing eelgrass beds in San Francisco Bay, and Figure 3.2-20 indicates model predictions of initial sediment deposition patterns following disposal at the San Pablo Bay site. In addition, turbidity and suspended solids are often naturally elevated, especially in the North Bay, as described in section 4.3.1.2. In general, dispersion of dredged material from any of the in-Bay disposal sites is substantial, and deposition of small amounts of dredged material from any of them may affect eelgrass or other areas of aquatic vegetation throughout the Estuary. However, note that the existing eelgrass beds are present despite higher past and present levels of dredged material disposal. Revised Figure 4.3-10 in the Final EIS/EIR shows existing eelgrass beds in San Francisco Bay. The significant long-term reduction of in-Bay disposal included in all three of the alternatives considered in the EIS/EIR would be expected to reduce any effect from dredged material that may have occurred in the past.

18e. Please see section 4.3.2.1 of the Final EIS/EIR, which has been edited extensively to address the impacts on wildlife at Alcatraz Island. Also see the responses to DOI comments 17 and 24g.

18f. Section 3.2.2 (see Figure 3.2-20) discusses redistribution of dredged material from dispersive in-Bay sites, including the San Pablo Bay site. Overall, the amount of dredged material that is redistributed from these sites is believed to account for only a very small proportion (less than 5 percent) of the material that must be periodically dredged from shallow creeks and navigation channels that may have associated clapper rail habitat along their fringes. This would be especially true for the San Pablo Bay disposal site, because the overall volume of material allowed to be disposed at this site is much less than at other in-Bay disposal sites. Therefore, no significant impacts are expected to be associated with re-deposition of very small volumes of SUAD-quality dredged material in clapper rail habitat.

18g. Like the other in-Bay disposal sites, short-term changes in dissolved oxygen (DO) levels are expected to occur during disposal events at the San Pablo Bay site. Monitoring at the site indicated that, after the dumping of dredged material, ambient levels of DO dropped but recovered to ambient levels within 10 minutes after the material was disposed. This short-term change in DO would have no significant impact unless the frequency of disposal approached the amount of time it takes for DO levels to return to background (i.e., 10 minutes) after individual disposal events. Disposal events at a given disposal site would not occur as frequently as every 10 minutes; disposal three times per day when a disposal site is being actively used is more common (see the response below to MAS comment 18i).

18h. Using the San Pablo Bay disposal site as an example, disposal frequency for the last 2 years has averaged three loads per day during the periods when the site is actively being used; although, in some months during this period, there was no disposal activity at this site (see the response below to MAS comment 18i).

Section 6.1.2.2 discusses the impacts that dredged material disposal can have on water column and benthic habitats. This section notes that disposal activities can cause temporary displacement of fish from the vicinity of the disposal site, especially during high-frequency disposal activity (whether due to cumulative water quality effects or due to the physical disturbance of disposal). Benthic habitat quality impacts would be more widespread and last much longer than impacts to water column habitat.

Section 6.1.1.2 discusses the potential frequency of in-Bay disposal events under high, medium and low disposal scenarios. Under the preferred alternative which calls for low volumes of in-Bay disposal, high frequency disposal events will be easier to avoid. Please also see the response to Oakland comment 40d.

18i. Total Suspended Solids (TSS) are often naturally high in the Bay, regardless of dredging and disposal activity. Disposal increases the TSS by only a small volume resulting in only occasional transient plumes. Existing testing programs prevent disposal of contaminated sediments in the Bay. By comparing the relative size and volume of San Pablo Bay to the amount and quality of material disposed there, it is unlikely that water quality would be affected.

Please see the response to MAS comment 18h.

Disposal events only take a few seconds. The frequency of disposal at any given disposal site varies; the most recent data on this for the San Pablo Bay site is for FY96 and FY97 (October `95 through September `97), based on records maintained by the COE (personal communication, Dave Dwinell, COE — San Francisco District, 1998). For FY96, disposal at the San Pablo Bay site occurred on 140 days spread over 9 months (during 3 months there was no disposal); during this time, an average of three loads of dredged material per day were disposed on the days that disposal occurred. For FY97, disposal at this site occurred on 134 days spread over 9 months, also with an average of three loads of dredged material per day on the days that disposal occurred. Section 6.1.1.2 discusses potential disposal volumes and adverse effects of disposal at the San Pablo disposal site. Please also see the response to Oakland comment 40d.

Like all disposal sites, the San Pablo site accepts material from "upstream" dredging locations, therefore only North Bay material is being deposited there.

18j. Statement noted. These changes are addressed in the Final EIS/EIR (see discussion of Wildlife Resources in section 4.3.2.2).

18k. Water column-related habitat impacts are discussed in section 6.1.2 (see especially section 6.1.2.2), and generally include effects to fish and wildlife (which include migratory waterfowl, especially diving species that may be found in the vicinity of the relatively deeper water San Pablo Bay and Carquinez Strait disposal sites). Overall, to the extent that high-frequency disposal activity occurs at these sites, disturbance and cumulative habitat quality degradation for these species may result, as discussed. It is true that impacts to canvasbacks and scaup are not discussed separately. However, these waterfowl should be much more able to avoid localized disturbance or temporary water quality degradation (e.g., turbidity) than would the migratory fish species that have no choice but to pass through the constricted Carquinez Strait area. By the same token, reduced disposal volumes and frequencies will reduce the risk of any impact from in-Bay disposal on these and other waterfowl.

18l. Statement noted. Please see the response to DOI comment 13.

Other upland options for beneficial reuse have been examined (please see the response to BPC comment 18). In addition, there are a variety of reasons why the restoration of tidal habitat is beneficial, particularly when the loss of seasonal wetlands is mitigated (please see the response to MAS comment 19d).

18m. This section of the document has edited to reflect the comment.

18n. Statement noted. Section 4.4.2.1 (Diked Historic Baylands) has been revised to include the above information on soil characteristics and shorebirds. It should be noted, however, that this portion of the document does state that "...the diked baylands tend to collect rainwater, functioning as seasonal wetlands if they are not regularly drained and/or pumped. In addition, Bay water seepage through levees is not uncommon." See revised section 4.4.2.1.

18o. Statement noted. The text has been edited to clarify that palustrine wetlands are considered a type of seasonal wetland.

18p. Statement noted. Seasonal wetland habitat is included in this table as "other upland." However, this table has been edited to present wetland use by special status species more clearly. Edits to this table also include the additional habitat use by the species noted above.

The use of the term "common" in Table 4.4-1 for the California brown pelican refers to this species presence in the Bay Area, not its historical range. In Appendix I, which contains the report "Wildlife Species of the San Francisco Estuary" (1992), the term "common" is defined as "usually or often

encountered in considerable numbers." Use of this term does not imply that the brown pelican will not be protected under the Endangered Species Act. Please see Appendix I and J of the EIS/EIR for more information on the brown pelican.

18q. Table 4.4-1 of the EIS/EIR and Table J-1 of the appendices have been edited to include these species, as well as other species that were cited in the text of the Draft EIS/EIR, but were not included in the tables. Please see Appendix J of the document regarding the consultation process for biological species of concern.

The discussion in section 4.4.2.1 notes that seasonal wetlands in diked historic baylands are used by migratory species. Other sections of the document note the importance of seasonal wetlands to migratory species and shorebirds during high tides and the need to avoid valuable sites and/or mitigate for seasonal wetlands when they are lost. Please see the responses to OAS comment 7 and SC-LPC comments 3i and 4.

18r. Section 4.4.4 of the document provides information on the capacity estimates for UWR and does provide capacity estimates for "true" upland reuse. Capacity estimates are organized into low, medium, and high scenarios (as shown in Tables 4.4-12, 4.4-13, and 4.4-14) that separate the wetland restoration, delta restoration (i.e., levee maintenance and stabilization), and rehandling (all material for reuse in sanitary landfills, construction uses, and other "true" upland reuses would require rehandling before use) reuse options into separate categories with capacity estimates provided for each.

18s. Leonard Ranch was included in Table 4.4-4 because it was determined through studies conducted by the LTMS and the COE to be "highly feasible" for development and use as a rehandling facility for dredged material within the 50-year planning timeframe. The determination of the site as "highly feasible" does not necessarily mean it would be developed as a rehandling facility. The development of rehandling facilities will need to be reviewed on a case-by-case basis and would be fully subject to the federal and state laws and regulations as mandated by both NEPA and CEQA.

18t. It is likely that less material may be required to create or restore seasonal wetlands in the diked historic baylands. However, dredged material could be used to raise existing elevations to create or improve micro watershed functions. Dredged material could also be used to create berms and impoundments. Also please see the response to MAS comment 19d.

18u. Statement noted. Please see the response to SC-LPC comment 4 in regard to the preferential siting of projects in areas with less existing seasonal wetland habitat. The scheduled restoration approach is discussed in response to SC-LPC comment 3i. In addition, the response to OAS comment 7 addresses the mitigation of seasonal wetlands.

Each proposed project would require review under the CEQA/NEPA process. Mitigation would be determined through this process on a site-by-site basis. Policy-level mitigation measures that address wetland loss and consistency with regional and inter-agency habitat plans are described in Chapter 5 of the EIS/EIR. Also see the responses to OAS comment 7 and SC-LPC comments 3i and 4.

18v. Statement noted. The indicated paragraph has been changed to reflect that seasonal wetlands, as well as uplands, and transitional areas played an important part in the historical habitat characteristic of the Bay region.

18w. Statement noted. Figure 4.4-4 is intended to illustrate a cross section of wetland restoration and is not indicative of public access. Public access would be evaluated on a case-by-case basis.

18x. Table 4.4-1 in section 4.4.2 of the EIS/EIR (the comment cited section 4.4.4.1) lists the habitat type species use. This table does contain information on the specific type of wetland habitat a species uses (i.e., "tidal" considered mudflat or marshes, "Delta Islands" or levees, "other upland" considered vernal pools or seasonal habitat). However, this table has been edited to more clearly reflect species'

use of specific wetland types. For more detailed information on each special status wildlife species, including life cycle information, please see Appendix J of the EIS/EIR. Also please see the response to MAS comment 18p. Table 5.1-4 shows guidance for wetland restoration projects including the need for evaluation of proposed mitigation and monitoring plans.

18y. The impacts on wildlife from the conversion of seasonal to tidal wetland habitat has been addressed in the Final EIS/EIR. Section 4.4.5.1 now discusses approaches to address habitat conversion, as well as Chapter 5, which outlines policy mitigation measures for habitat conversion.

18z. Statement noted. Please see the response to SC-LPC comment 3i.

18aa. Statement noted. Section 4.4.5.1 (Habitat Restoration) discusses habitat conversion impacts for wetlands. Habitat restoration is one type of upland and wetland reuse, and is identified as such under section 4.4.5 (Types of Upland and Wetland Reuse — Resources of Concern).

18bb. Statement noted. Please see the responses to DOI comments 6 and 7 and OAS comment 7.

18cc. Statement noted. Please see the response to OAS comment 7.

18dd. Please see the response to OAS comment 7.

18ee. The water column pathway rarely results in significant direct impacts to most aquatic organisms for two reasons. First, most fish species are able to actively avoid the immediate vicinity of dredging and disposal areas. Secondly, water column plumes during dredging or disposal are usually local and temporary (diluting to background levels within minutes to a few hours after dredging or disposal operations cease). In certain limited circumstances, significant direct impacts can occur. These circumstances are identified in section 3.2.4.1 and include continuous activity near resources of concern, dredging of highly contaminated materials, activity in constricted areas where column mixing would be inadequate, and activity during periods that would result in effects on a particular species of concern (e.g., herring spawning sites). Based on the long-term experience of disposing approximately 400 mcy annually at hundreds of aquatic disposal sites nationwide, the water column is rarely found to be the primary pathway of concern.

18ff. The SF-DODS EIS addressed these issues based largely on conservative modeling studies. The Annual Monitoring Report referenced in response to CDFG comment 6 also addresses many of these questions, but based on field monitoring of actual disposal at the site. The field monitoring is designed to identify whether any site requirements are being exceeded, so that management changes can be made, if necessary. Field monitoring to date has confirmed the predictions of the SF-DODS EIS, and shown that impacts from disposal of dredged material at SF-DODS are not significant. For example, deposition less than 5 cm works into native sediments each year via bioturbation without significant impact. Therefore, no deposition greater than 5 cm per year is allowable outside the disposal site boundary. The area allowed to accumulate more than 5 cm per year (the area within the disposal site boundary) is approximately 6.5 square nautical miles. Monitoring to date indicates that the actual area accumulating more than 5 cm per year is less than 1.2 square nautical miles, and is entirely within the disposal site boundary as required.

EPA purposefully chose a non-dispersive site for ocean disposal to minimize potential impacts to the water column and other resources. The computer model constructed to help determine potential impacts estimated that a minimum of 57 percent of disposed dredged material would accumulate within the site boundaries on the seafloor. The actual percentage, based on seafloor mapping in 1993 and 1995 following disposal operations is 60 to 83 percent. Monitoring by the Navy has also shown that much less material is suspended in the water column (less than 4 percent) following disposal operations than was predicted in the site designation EIS. These data indicate that there should be fewer potential impacts to the water column than discussed in the SF-DODS EIS.

18gg. Section 7.3 outlines federal and state financing options to promote beneficial reuse. This information is summarized from a report in Appendix Q of the EIS/EIR. In-Bay disposal of dredged material is currently "subsidized" by the federal government for Bay Area dredgers. Most of the funding options for beneficial reuse that are discussed represent finance development by tapping into existing sources not used in the past, expanding the use of past sources, and creating new sources. The costs for upland/wetland reuse would not fall upon Bay Area taxpayers or predominately upon any sector of the dredging community.

18hh. The LTMS agencies have the authority to require all monitoring actions they deem necessary, as conditions of a project's permits or other authorizations. Cost (including monitoring cost) is one consideration when the agencies evaluate overall practicability of a project. Section 5.1 describes policy-level mitigation measures applicable to various kinds of disposal or reuse projects, and relevant tables in section 5.1.3 include a "Regulatory, Mitigation, and Monitoring Requirement" entry.

19. Please see the specific responses below to MAS comments 19a through 19m.

19a. The key to dredged material regulation in the Bay Area is public input and monitoring. Through the review of program-level documents and project-specific reports, the regulation of dredged material is a public process. This environmental review process is open to all stakeholders, and it is important that the environmental community participate to help ensure that agencies do stay on track. Also please see the response to PTG comment 2.

19b. Specific opportunities for public input will vary depending on the established process for the agency designating the site. For new aquatic sites, public review and comment will be part of the site designation process. Changes to management requirements at existing sites will occur via the LTMS Management Plan revision process and/or via separate agency processes as appropriate. For example, EPA will initiate formal rulemaking to set a final disposal volume limit for the SF-DODS; BCDC and SFBRWQCB will follow established procedures to update or amend their Bay and Basin Plans, respectively.

19c. The policies listed in Section 5.1.1.3 of the document would aid in the LTMS agencies' review of the need for dredging. The COE's NEPA review processes and BCDC's Seaport planning process (both in consultation with the other LTMS agencies) work to identify projects that could be developed in the most beneficial manner based upon environmental analyses and land-use planning. In some cases the factors of sedimentation rate and consolidation of uses may be considered. Neither of these review and planning processes occur behind "closed doors"; in fact, all of these planning processes are open for public review and comment. The DMMO review process also requires a COE public notice for any proposed dredging project (whether proposed by a private entity or the COE).

An example of a project that was identified through this planning process as possibly requiring unnecessary dredging is the John F. Baldwin (JFB) Phase III Project. As originally proposed, that project would involve dredging 9.0 million cubic yards (mcy) of material by deepening 16 miles of navigation channels in north San Francisco Bay. The purpose for the project was to improve the efficiency of transporting petroleum products to refineries in the Carquinez Strait area. Now another way to improve that efficiency has been proposed that has advantages over the deepening — a new marine terminal off Richmond connected to an onshore pipeline to the Carquinez area. Both potential solutions to the problem — the originally proposed channel deepening and the "pipeline project" — are being analyzed in the JFB EIR/S. Because of the pipeline project, it is now expected that deepening the JFB ship channel will not be necessary.

19d. Section 4.4.5 of the EIS/EIR notes that dredged material can be used to create or restore seasonal wetlands by raising and modifying topography and thus improving wetland hydrology. Tidal wetland restoration is emphasized in this document for a number of reasons, however. Sites appropriate for tidal restoration are in locations easily accessible by barge, which would allow dredgers to dispose of their material more easily than sites that may be further upland. Tidal sites would require larger

amounts of material for restoration than seasonal wetlands. Both location and ability to accommodate large volumes of material result in potential tidal restoration sites being a more economical option than seasonal restoration. Finally, the great historical loss of tidal wetland habitat (as much or more than other habitat types) is correlated with a dramatic reduction in wildlife populations that depend on Bay marsh lands for habitat or nursery grounds.

This document's emphasis on tidal restoration does not, however, indicate that seasonal wetlands are not valued. The LTMS agencies recognize the value of seasonal wetlands and know that a variety of habitats and habitat functions are necessary for the conservation of estuary species. For more information on seasonal wetlands, please see the response to OAS comment 7 and SC-LPC comments 3i and 4.

Statement noted. The Regional Goals program is a collaborative effort among many agencies (including the LTMS agencies) and public interest groups. The Regional Goals program provides another forum in which to address issues associated with the LTMS process. However, it also involves the consideration of a variety of policies and projects with which LTMS is not associated. The Regional Goals is a separate program so that the needs of a variety of projects and stakeholders can be met. As discussed in the responses to other comments, the LTMS is not a finite program. Rather, it is ongoing and designed to allow for management updates based on the availability of information. This would include data derived from any ongoing or future studies addressing regional habitat restoration efforts.

19e. At present, no species "window" is being ignored. The species used to determine dredging and disposal "windows" are considered the most important species because they are listed as threatened or endangered or are economically important, such as herring. While there are some fish in the Bay system year-round, migration or spawning are concentrated over periods of several months. By avoiding those more sensitive periods, while allowing activity at other times, the risk of adverse impacts is significantly reduced. Also see the response to MAS comment 18c.

19f. A "complete review" refers to meeting the requirements of the local, state, and federal reviewing and permitting agencies as required by both the California Environmental Quality Act (CEQA) and the federal National Environmental Policy Act (NEPA). Environmental review will be required on a project-by-project basis. Please see the response to OAS comment 7 for information on the policy-level mitigation measures for wetland losses that are now included in the EIS/EIR.

19g. Site-specific environmental reviews would be required to address alternative development sites for a proposed project and provide information on the ultimate net benefit to the site's species or habitat. Also see the response to MAS comment 20m.

As provided in Tables 5.1-2, 5.1-3, and 5.1-4, mitigation measures are required before a proposed project can proceed. The CEQA/NEPA process required in the category of Regulatory, Mitigation, and Monitoring Requirements, would result in the identification of site-specific mitigation measures before a site could be approved for restoration. Also see the response to OAS comment 7. In addition, mitigation and monitoring plans will be addressed in more detail in the LTMS Management Plan. Section 7.1.2 provides a brief description of the types of monitoring plans that are anticipated.

Please see the responses to MAS comment 20m and SC-LPC comment 3g.

19h. Statement noted. Monitoring and mitigation plans will be required for CAD (section 7.1.2). Also see the response to SC-LPC comment 3g. The EIS/EIR considers the habitats adjacent to reuse/disposal sites; see section 4.4.5 (e.g., Table 4.4-15 includes impacts on adjacent wetlands).

19i. The issue of dredged material beneficial reuse and the potential impacts to wetlands adjacent to levees is discussed in detail in section 4.4.4.2. Since the LTMS agencies recognized this potential impact, it was proposed that dredged material be placed only on the top and in-board side of levees. Further,

Table 5.1-5 outlines the guidelines proposed for beneficial reuse of dredge material for levee repair and stabilization. These guidelines include provisions for proper project siting to avoid and/or mitigate significant impacts such as wetland disturbances. In addition, the guidelines present the need for evaluation of all projects for compliance with federal and state laws, as well as the need for development of mitigation and monitoring plans.

19j. The EIS/EIR addresses alternative programs to deal with dredging that is done, not alternatives related to the amount of dredging or the need for dredging. Market issues, competition among Ports along the West Coast, and other factors have more to do with the amount of dredging needed.

See the expanded discussion in Chapter 3 regarding dredging impacts. Difficulties in determining the need for dredging are briefly explained in revised section 2.6.2.

19k. Please see the response to Chevron comment 5b.

19l. Throughout the EIS/EIR, beneficial reuse is described as the reduction of the risk of environmental impacts associated with in-Bay disposal by reusing dredged material to create habitat and to provide construction fill, levee rehabilitation, beach nourishment, landfill cover, and other end uses. Potential in-Bay impacts are addressed in the EIS/EIR, however, some of the confusion may lay in the fact that impacts are addressed on a policy level rather than on a site-specific basis. Sites proposed for beneficial reuse will require environmental reviews, and impacts will be addressed with specific mitigation measures. Please see the response to Chevron comment 5b for further explanation.

19m. Please see the responses to OAS comment 7 and SC-LPC comment 3g.

20. Please see the specific responses below to MAS comments 20a through 20t.

20a. Statement noted. Please see the response to Chevron comment 5b.

Please see the response to DOI comment 15.

20b. Several requirements of the SF-DODS Final Rule are designed to protect the marine habitat within the Marine Sanctuary and in the vicinity of the SF-DODS. For example, disposal vessels must transit within designated vessel traffic lanes through the Marine Sanctuary, and must stay a minimum of 3 nautical miles away from the Farallon Islands. (USCG radar keeps track of this for the first 30 miles.) Also, disposal operations are prohibited when sea states exceed prescribed limits, and barges are limited in the loaded volume of dredged material to reduce potential for spillage. Mandatory electronic systems aboard the disposal vessels record navigational coordinates throughout the trip, as well as barge draft, and the coordinates of where disposal actually occurs. In addition, no more than one disposal vessel is allowed at any one time in the disposal site target zone. Despite these requirements, accidents are expected to occasionally occur (please see the responses NHI comments 17d, 17e, and 18a).

Disposal plumes were predicted in the site designation EIS to dissipate rapidly and locally to ambient levels within the SF-DODS site boundaries. The Navy performed monitoring studies of disposal plumes following disposal operations and was able to confirm that plumes dissipate to ambient levels within the disposal site in a short time (less than one hour). Furthermore, seafloor mapping of dredged material deposits by the Navy and Port of Oakland confirms the predictions of the site designation EIS.

20c. The potential for in-Bay disposal to cause adverse water quality impacts is mainly associated with disposal frequency. The preferred alternative (Alternative 3) would decrease the frequency with which in-Bay disposal sites are used. Numerous studies on the water quality impacts of dredging and disposal indicate that adverse changes in the parameters of dissolved oxygen, dissolved pollutant levels, ammonia and sulfides, and suspended solids/turbidity are restricted to the immediate vicinity of the

disposal plume. Once plumes dissipate to background levels, immediate water quality effects generally no longer exist.

Section 4.3.1.2 of the EIS/EIR discusses the impacts on water quality from dredged material disposal at in-Bay sites. This section of the document notes that extensive studies have been conducted on water quality impacts from dredged material disposal. The most comprehensive studies include the Regional Monitoring Program managed by the San Francisco Estuary Institute (SFEI 1994) and studies conducted by the Interagency Ecological Program (IEP) focusing on parameters affected by water flow. Copies of the studies completed by these entities are available through the LTMS agencies.

Potential impacts to natural resources at Alcatraz Island are discussed in section 4.3.2.1 of the Final EIS/EIR, which has been edited extensively to address the impacts at Alcatraz Island. Also please see the responses to DOI comments 17 and 24g.

The LTMS agencies' preferred alternative (Alternative 3) would reduce annual average use of in-Bay disposal sites from approximately 4 mcy per year to approximately 1 mcy per year. With implementation of the preferred alternative, disposal at all in-Bay sites would decrease significantly. The LTMS agencies do not agree that evidence supports a finding that limited disposal at these two sites has sufficient adverse impact to justify terminating all disposal at both the Carquinez and San Pablo disposal sites.

The San Pablo site accepts dredged material for disposal mostly from upstream sites. The amount of material disposed at the San Pablo site is a small fraction of that resuspended each year through natural processes. As is true for the other in-Bay disposal sites, the San Pablo Bay site is dispersive, and dredged material particles will therefore resuspend after their initial dispersion at the disposal site. However, huge volumes of sediment (100 to 250 mcy annually) naturally resuspend into the water column from San Pablo Bay's extensive shallows and mudflats. Based upon this natural resuspension, the need for regular dredging of the Novato, Gallinas, and Miller creeks is probably not due to disposal at the San Pablo site.

20d. Statement noted. Please see the responses to MAS comment 20m and Chevron comment 5b.

Please see the response to BPC comment 18.

As section 6.1.1.3 notes, other specific types of dredged material reuse affect water quality in a manner similar to wetland restoration, levee maintenance, or rehandling sites, all of which are discussed in this section. The potential water quality impacts from the reuse of dredged material at landfills is similar to that at rehandling facilities. The potential for the reuse of material at landfills is discussed throughout the document, as well as in two reports produced by BCDC. Copies of these reports, entitled *An Analysis of the Beneficial Uses of Dredged Material at Upland Sites in the San Francisco Estuary* (BCDC 1994) and *Analysis of the Potential for Use of Dredged Material at Landfills* (BCDC 1995a), are both available through BCDC.

The San Francisco Bay Conservation and Development Commission's Staff Report on Wetlands in the North Bay Planning Area, prepared by the North Bay Steering Committee of the North Bay Wetlands Protection Program, estimates that over 42,000 acres of historic diked baylands exist in the North Bay.

Individual tidal habitat restoration projects vary greatly in size, therefore an estimate of total acreage is not exact. The analysis in section 4.4.4.5 used an average quantity of dredged material estimated to be used for such projects. It was assumed that approximately 7 mcy of dredged material could be used for large individual restoration projects. An example of such a project is the proposed restoration of the Hamilton Army Air Field in Marin County. This project could use up to 7 mcy of material in the restoration of approximately 700 acres. This ratio of 1 mcy of dredged material per 100 acres of restoration would yield approximately 1,100 acres of restored tidal habitat under the medium reuse scenario in the first 5 years and 1,600 acres of restored tidal habitat under the high reuse scenario in the

first 5 years. Total estimated restored acreage over the 50-year LTMS planning period would, therefore, be 11,000 acres and 16,000 acres for the medium and high reuse scenarios, respectively.

It is acknowledged that some wetland restoration sites may not be successful at first and may require adaptive management to ensure site restoration. However, as the LTMS agencies acquire additional information on restoration techniques, the successful restoration of all sites should be ensured. The LTMS agencies recognize that ongoing studies in the reuse of dredged material for wetland creation/restoration and in the upland environments will be necessary and have proposed funding appropriations for this purpose. The LTMS program is an ongoing effort designed to allow for management updates based on the availability of information. This would include the data derived from ongoing monitoring and analyses of existing wetland habitat restoration efforts.

20e. Statement noted. Table 6.1-2 provides the potential benefits and impacts/risks to fish and wildlife habitat by placement environment and disposal volume. The values presented in this table were determined based on the highest achievable results. For instance, as section 6.1.2.3 explains, at the high volume of UWR placement (80 percent of all SUAD material, or 3.8 mcy per year), it was assumed that the greatest number and acreage of wetland sites would be restored. Sixty-six (66) percent of this volume would be reused in wetland restoration projects and this equates to an assumed 17 or 18 new wetland restoration projects. The potential habitat benefits from this degree of wetlands restoration are considered to be high (+3). However, at the same time a substantial degree of adverse impact (-3) to existing habitats, including seasonal wetlands, could also occur because under such a high reuse scenario, some projects would likely be constructed in areas of relatively high impact sensitivity.

20f. Even based on maximum volumes of 500,000 cy per year, the material released during disposal activities (mainly uncontaminated sand) in San Pablo Bay is unlikely to affect surrounding wetlands. Also, the amount of material disposed in San Pablo is a tiny fraction of that resuspended each year through natural processes. Lastly, studies of sedimentation rates in San Pablo Bay by Jaffe, Smith, and Zink of the USGS, in Menlo Park, California (May 1997), from 1856 to 1983 indicate that the tidal mudflat area is decreasing and sediment is being lost to the system faster than it is replaced from upstream sources.

The substrates of San Pablo Bay benthic habitats are more similar to the material being dredged (mainly sand) than would be the case at Alcatraz or the ocean site. Also, the amount of material disposed in San Pablo Bay and Carquinez Strait is a tiny fraction of that resuspended each year through natural processes.

Material disposed at in-Bay sites is tested for contaminants before disposal. Contaminated material is not approved for in-Bay disposal. Existing procedures for evaluation and testing of materials prior to dredging are designed to prevent contaminants from entering the aquatic environment. Although studies of bioaccumulation in wetlands have been conducted in sites throughout the country, we do not feel they are necessary for this EIS/EIR.

20g. Comment noted. However, the LTMS agencies disagree that their approach to maximizing overall net environmental benefits when disposing at upland/wetland reuse sites is unacceptable. Please see the response to MAS comment 20m regarding policy-level mitigation. Please see the response to OAS comment 7 regarding mitigation for the loss of seasonal wetland habitat.

20h. Section 6.1.2.3 uses the term "relatively sensitive areas." Relatively sensitive areas are sites that provide some habitat value for estuary species, but are not considered high quality or do not provide the desired habitat functions. The EIS/EIR has been edited to reflect this definition; see the discussion of "Habitat Restoration" in revised section 6.1.2.3.

20i. Please see the response to DPC comment 4.

20j. Please see the response to MAS comment 18f and UA comment 3. Also note that implementation of the preferred alternative (Alternative 3) would result in the reduction of sediment deposits at in-Bay environments, not an increase. The intent of the LTMS program is to reduce the use of in-Bay disposal sites.

20k. Table 6.1-3 includes the impacts on special status species from the various disposal volumes at placement environments. The LTMS agencies do take into consideration that every habitat restoration project may not be successful, and address avoidance of restoration failure with policy-level mitigation measures located in section 5.1.2.1 of the document. A policy-level mitigation measure in this section requires compensatory mitigation, where appropriate.

20l. A policy level mitigation measure to address dredging has been added. Please see the responses to DOI comments 6, 7, and 27e.

20m. One of the most important overall benefits addressed by the EIS/EIR is the potential for placement of dredged material at upland or wetland reuse sites resulting in significant enhancement and increases to fish and wildlife habitat. The document also recognizes the potential of significant habitat impacts associated with restoration efforts. An important policy-level mitigation measure, common to all LTMS alternatives (see section 5.1.2.1), is that habitat restoration projects using dredged material must result in an overall net environmental benefit that is fully coordinated and consistent with the needs identified in resource management plans for any area.

20n. Statement noted. The LTMS agencies will adopt the general policy that wetland restoration and enhancement should be maximized when addressing project-specific review of rehandling and confined disposal facilities (see Table 5.1-2). In addition, the review process required by CEQA and NEPA on a site-specific basis would result in the consideration of any effects on special status species and their habitat. In cases where special status species habitat would be affected, site avoidance or the implementation of mitigation measures would minimize any impacts. Also see the response to MAS comment 20m.

Special status species habitat is protected under the federal and state Endangered Species Acts, and impacts to existing special status species habitat would have to be avoided to the maximum extent possible. Projects that would result in the direct loss of special status species habitat generally would not be permitted if less environmentally damaging alternatives were possible, or if an overall net benefit to the same species or habitat would not ultimately result. Overall, adverse effects to special status species and their habitats are expected to be low.

20o. Statement noted. Please see the response to DOI comment 11.

20p. Statement noted. Site- and project-specific assessments of transportation methods, any significant impacts associated with their use, and new facilities that may be needed to support a particular disposal or reuse site are outside the scope of this policy/programmatic EIS/EIR. The rail line along Highway 37 will be evaluated on a case-by-case basis in associated reuse projects. Section 6.1.4.3 has been revised to note that the impacts associated with rail transport of dredged material are somewhere between those of truck transport and barge transport.

20q. Statement noted. Please see the responses to DOI comments 2 and 11, and OAS comment 7.

20r. Statement noted. While the comment refers to Alternative 3, the text (section 6.2.1.3) from the Draft EIS/EIR referred to in the comment deals with Alternative 2. Alternative 2 proposes a balanced disposal between the in-Bay and UWR environment, with low disposal in the ocean environment. The Draft EIS/EIR did not present a preferred alternative, leaving this decision to be made by the LTMS agencies following the public comment period. Subsequently, Alternative 2 was not selected as the preferred alternative.

20s. The streamlining discussed in the Draft EIS/EIR is embodied in the pilot phase DMMO. The first and second six-month reports for the pilot phase of the DMMO are included in Appendix M; copies of these reports are also available from the San Francisco District of the COE. Please see the response to Redwood comment 5f(1).

20t. Statement noted. Please see the response to OAS comment 7. Also see the responses to BPC comment 18 and SC-LPC comment 4.

21. Please see the responses below to comments 21a through 21e.

21a. In addition, the LTMS Management Plan to implement the preferred alternative will be circulated for public review before it is finalized.

21b. Statement noted. As section 4.8 discusses, the application process for dredging projects includes the input and review by state and federal agencies concerned with endangered and migratory species, as well as important habitat. Restoration projects would require a separate environmental review process under CEQA and NEPA, which would also involve the participation of these resource agencies. Also see the response to DOI comment 6.

21c. Statement noted. Options for disposal allocation will be addressed further in the LTMS Management Plan. Also, see the response to OAS comment 7 regarding mitigation for the loss of seasonal wetlands.

21d. Statement noted. Please see the response to DOI comment 25l.

21e. Please see the responses to GGAS comment 17.

22. Please see the response below to MAS comment 22a.

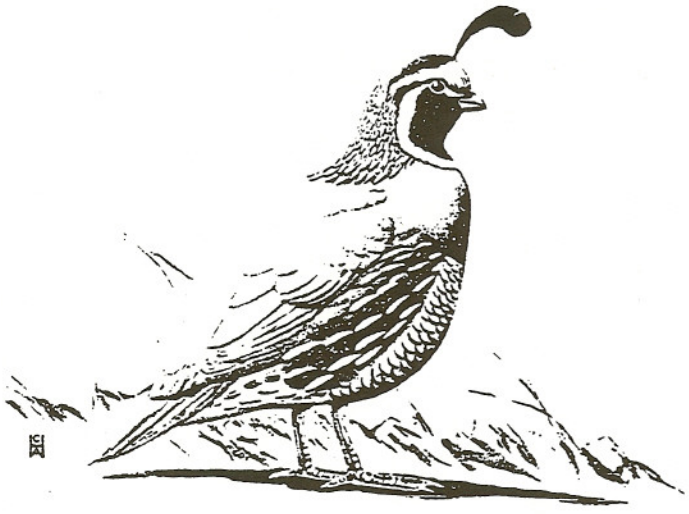
22a. Statement noted. Section 8.3.1 (Habitat Conversion) contains two subsections; one discusses the cumulative benefits and the other the cumulative impacts of habitat conversion. The cumulative impacts section states that the conversion of seasonal wetland to tidal habitat could result in a significant cumulative impact. Loss of seasonal wetlands would result in the decrease in availability of important habitat for local and migratory shorebirds and waterfowl. The LTMS agencies are aware of the importance of a combination of habitat types and will determine the suitability of a site's tidal restoration based on previous studies and regional and inter-agency habitat plans. Please see the responses to BPC comment 18 and SSFBA comment 12d.

As stated under cumulative benefits, the reuse of dredged material is only one method that could be used to restore a tidal wetland (i.e., by raising a site's elevation). Restoration would be implemented with dredged material when the benefits of dredged material reuse and successful ecological restoration could be combined. Also see the response to Gravanis comment 9r(2).

Please see the response to OAS comment 7.

23. The last paragraph on page 1 of Chapter 10 has been edited to read, "Placement of dredged material in the upland/wetland reuse environment would...." In the same paragraph, the text has been edited to read, "In the case of habitat restoration sites, existing habitat functions at a site would be modified. In many cases, seasonal wetlands would be replaced when tidal wetlands are restored at a site. However, many of the habitat functions that seasonal habitats provide would be augmented by the creation of new habitat, such as tidal wetlands."

24. Statement noted. The LTMS has not and will not endorse any private development project. However, the LTMS supports in concept the development of dredged material reuse and rehandling efforts whether these be by public or private venture.



MT. DIABLO AUDUBON SOCIETY
P.O. BOX 53
WALNUT CREEK, CALIFORNIA 94596

13 July 1996

LTMS EIS/EIR Coordinator
%US Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorn St.
San Francisco, CA 945947

Greetings:RE:DEIS/DEIR) and LTMS

The long term strategy for disposing of dredge material covered by the Draft Environmental Statement Report is highly disturbing.

There is NO proposed mitigation for losses of seasonal wetlands. It is our understanding that some 18,000 to 21,000 acres of seasonal wetlands remain around San Francisco Bay. Fulfilling the proposed Plan would mean destruction of 7,225 acres i.e. 33% of the Bay's seasonal wetlands. | 1

The impacts of such massive destruction on birds and other wildlife will be serious and since Bay area wet and uplands are crucial for many species the Plan should NOT be implemented unless and/or until further study has been done as to the effects of the proposed disposal project are fully assessed, understood and mitigated for. | 2

Under 5.1.2.1 reference is made to projects not covered by a Regional Wetlands Goal Plan. NO compensatory mitigation. The proposed Plan appears to rely on "minimization" of projects impacts but since no one knows, or will (if the Plan is implemented as presently proposed) what the full effects really are, there is NO significant, scientific way to MINIMIZE impacts. | 3

There are MANY serious problems with the Plan as presently proposed. It MUST NOT go forward until further, scientific study has been undertaken to determine ALL of the impacts that will occur is the present dredge disposal Plan is implemented. | 4

Yours very truly,

A. B. McNabney
Vice President-Conservation

R-545

Responses to the MDAS — Mt. Diablo Audubon Society, letter dated July 13, 1996

1. Contrary to this comment, full compliance with both federal and state law in regard to avoidance and/or mitigation of potential impacts to seasonal wetlands are proposed by the LTMS agencies and detailed in the Draft EIS/EIR (see section 4.4.4, section 5.1.3, and specifically Tables 5.1-2, 5.1-3, and 5.1-5).

2. No specific UWR project will be implemented until these issues are adequately addressed on a site-specific basis, including any appropriate NEPA/CEQA evaluations.

3. Please see the response to SC-LPC comment 3a.

4. See the response to GGAS comment 27. Project impacts will be dealt with on a case-by-case basis.

Napa-Solano Audubon Society

Post Office Box 5150

Vallejo, CA 94591

July 12, 1996

LTMS EIS/EIR Coordinator
U.S. Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorne Street
San Francisco, CA 94947

Dear Coordinator:

I am writing on behalf of our chapter to comment on the draft of the ***Long Term Management Strategy for the Placement of Dredge Material in the San Francisco Bay Region*** EIS/EIR.

I understand and appreciate the time and labour that goes into the compilation of such a document. However, after perusal of the document and consultation with other concerned individuals and groups it is necesary to point out serious flaws in the report that require reconsideration, or better yet, a re-writing. I will limit our organization's comments to those areas that effect the subjects we are most concerned with--birds, and their habitat.

Firstly: Proposed impacts on seasonal wetlands--(Section 6.1.2.3); the report does not address mitigation for the loss of seasonal wetlands as required by both CEQA and NEPA. "Seasonal" wetlands provide a critical habitat niche that is not replaced by turning them into "tidal" wetlands. Both are necessary for a healthy eco-system. In the winter season, seasonal wetlands offer feeding opportunities for shore birds during periods of high tide when mud-flat feeding zones are unindated. Seasonal wetlands also provide exploitable opportunities for small mammals that are the prey of predatory birds such as hawks, and owls. 1

Secondly: The report acknowledges impacts on fish populations if in-bay disposal becomes the option of choice--(4-60). But no mention is made of the resulting impacts on waterbirds dependent on fish as a food source. Timing for such disposal must be defined; such disposal should not occur during nesting seasons when food needs increase because of young. 2

Thirdly: The 50 year planning period is too long. Changes in technology, environmental conditions, and enhanced scientific understanding of all processes within the strategy will surely happen, but flexibility in meeting them is sacrificed by the 50 year time frame. 25 years or less would seem more prudent. 3

Sincerely,

Peter S. Whyte
Chapter President

Responses to the NSAS — Napa-Solano Audubon Society, letter dated July 12, 1996

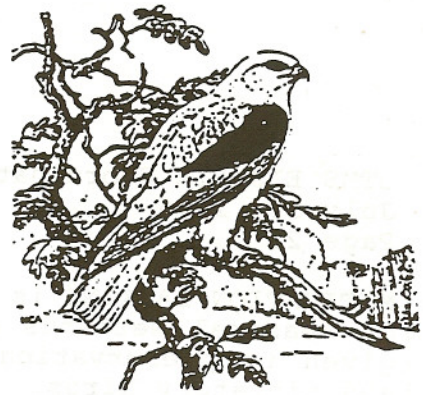
1. Please see the response to MDAS comment 1.

2. Statement noted. The LTMS was formulated to resolve the controversy regarding the potential adverse impacts associated with disposal of dredged material at in-Bay sites (see section 2.2). While these potential impacts were framed primarily in regard to Bay fisheries, the implementation of the LTMS preferred alternative will result in a reduction in the risk of in-Bay disposal impacts for waterbird species that use the Bay for feeding as well.

3. Please see the response to BayKeeper comment 2a.

Ohlone Audubon Society, Inc.

A Chapter of the National Audubon Society
Southern Alameda County, California



July 16, 1996

LTMS EIS/EIR Comments
c/o U.S. Environmental Protection Agency
Region 9 (W-3-3)
75 Hawthorne Street
San Francisco, California 94947

Via Facsimile and
Postal Service

Subject: Long-Term Management Strategy (LTMS) For The Placement Of Dredged Material In The San Francisco Bay Region. DRAFT Environmental Impact Statement/Environmental Impact Report April 17, 1996.

LTMS EIS/EIR Coordinator:

The Ohlone Audubon Society has reviewed the above subject document and has the following comments and questions.

There is concern that the disposal of dredged material for the conversion of seasonal wetlands to tidal wetlands will destroy critical seasonal wetland habitats. See Page 4-125 Section on HABITAT CONVERSION IMPACTS. | 1

Where are the technical data that demonstrate that conversion to tidal marsh habitats is more important than preserving seasonal wetlands? | 2

Have the LTMS agencies researched the number of seasonal wetland acres around San Francisco Bay that have been destroyed by filling for development? Also, is there information on the number of acres of seasonal wetlands that have been converted to tidal marsh? (For example there has been a loss of seasonal wetlands along the Hayward/San Leandro shoreline. Have the LTMS agencies researched the effect of this loss on resident and migratory birds?) | 3

There is concern that the REGIONAL WETLANDS GOALS efforts have not focused on shorebird and waterfowl useage of seasonal wetlands during high tides. Before the UPLAND/WETLAND REUSE of DREDGED MATERIAL is considered as an alternative, there should be scientific data published on shorebird useage of seasonal wetlands. Will the public be given an opportunity to review this information before a decision is made by the LTMS agencies for an alternative placement of dredged spoils? | 4

Have the LTMS agencies given consideration to reducing the need for dredging projects which have high siltation rates? Are there cost-benefit analyses of these dredging projects? Dredging reduction should have been addressed in the DRAFT EIS/EIR. | 5

6 MITIGATION BANKING is not the answer for the loss of individual parcels of seasonal wetlands around San Francisco Bay. More thought should be given to preservation of these seasonal wetlands for use by resident and migratory birds.

7 In reviewing various sections of the LTMS EIS/EIR there is an obvious omission of mitigation measures dealing with creating new seasonal wetlands when existing seasonal wetlands are destroyed by filling with dredge spoils. The creation of compensatory new seasonal wetlands must be in place and functioning prior to the destruction of existing seasonal wetlands. Why wasn't this subject discussed in the LTMS EIR/EIR?

8 HABITAT RESTORATION Section 4.4.4.1 and HABITAT CONVERSION Section 8.3.1 discuss using dredge material for re-establishing appropriate elevations for tidal wetlands,and use the SONOMA BAYLANDS TIDAL MARSH RESTORATION SITE Page 4-124 as an example. Have the LTMS agencies observed what is occurring on the SONOMA BAYLANDS SITE? Will the SONOMA BAYLANDS project be used as a model for tidal marsh restoration? When will SONOMA BAYLANDS TIDAL MARSH RESTORATION begin to function as a tidal marsh?

9 Ohlone Audubon Society appreciates this opportunity to comment on the LTMS plans for dredged material, and wishes to receive copies of the public comments and the FINAL EIS/EIR.

Sincerely yours,

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Responses to the OAS — Ohlone Audubon Society, Inc., letter dated July 16, 1996

1. Please see the responses to OAS comment 7 and SC-LPC comment 4.

2. The LTMS report *Potential Impacts of Tidal Marsh Restoration in the North Bay Area of the San Francisco Estuary* (LTMS 1994h) discusses the importance of both seasonal and tidal wetland habitat. It also states that some seasonal habitat functions can also be provided by tidal wetlands. However, high tide, storm cover, and possibly other functions that seasonal habitat provides cannot be obtained in tidal habitat. The LTMS agencies acknowledge that seasonal habitat is very important, and mitigation may be necessary and will be addressed on a project-specific basis. Please see the responses to OAS comment 7 and SC-LPC comments 3i and 4 for additional information.

3. Research of this type was not conducted as an aspect of the LTMS. However, the LTMS agencies have separately each been involved in such work. It is recognized that there have been significant losses in seasonal wetland habitat.

   Please see the response to DOI comment 15.

   A study was conducted in the North Bay area of the San Francisco Estuary (please see the responses to DOI comments 10a and 10b), but not along the Hayward/San Leandro shoreline. Other work in this area is being conducted by resource agencies and academic interests; however, these studies are outside of the context of the LTMS. As discussed in the responses to other comments, the LTMS is not a finite program. Rather, it is ongoing and designed to allow for management updates based on the availability of information. This would include data derived from any ongoing or future studies addressing seasonal wetlands along the Hayward/San Leandro shoreline.

4. Please see the response to DOI comment 10b. Approval must also be obtained through the CEQA/NEPA process for each proposed restoration project.

   Please see the response to DOI comment 10b.

5. In response to the comment questioning whether the LTMS agencies have considered reducing dredging in areas that have high siltation rates, please see the response to MAS comment 19c. In response to the comment questioning whether there are cost-benefit analyses of dredging projects that have high siltation rates, the COE, for example, re-evaluated Mare Island Strait maintenance dredging subsequent to the Mare Island Naval Base Closure, and found that a reduction in channel depth and associated dredging was warranted.

6. Statement noted. Please see the response to DOI comment 25l.

7. Statement noted. The LTMS agencies acknowledge that mitigation for seasonal wetland loss may be required on a project-specific basis. Section 5.1.2.1 of the EIS/EIR has been edited to reflect that mitigation may be necessary in some cases. Please note that Draft EIS/EIR Tables 5.1-2, 5.1-3, and 5.1-4 (Final EIS/EIR Tables 5.1-3, 5.1-4, and 5.1-5), which provide overall guidance for upland/wetland reuse projects, already indicate the need for mitigation and monitoring plans under the category of Regulatory, Mitigation, and Monitoring Requirements. In addition, as noted in these tables, any proposed project would require an environmental assessment under CEQA and NEPA, which would examine the impacts of habitat conversion and provide mitigation measures for each restoration site. Proposed projects would also be consistent with regional habitat plans, which would ensure that projects are consistent with the desired mix of wetland pattern and type. Also please see the responses to BPC comment 18 and SC-LPC comments 3g and 4.

8. The LTMS agencies intend to learn from the Sonoma Baylands Wetland Restoration Project. Ultimately, a restoration project will repeat methods that proved to be successful in this project, and

avoid or improve upon techniques that failed to accomplish the desired results. Also see the response to NHI comment 14c.

9. Statement noted. The LTMS agencies intend to send copies of the Final EIS/EIR to all commenting parties.

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July 19, 1996

LTMS EIS/EIR Coordinator
c/o U.S. Environmental Protection Agency
Region 9 (W-3-3)
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San Francisco CA 94947

Re: **Comments on Draft LTMS EIS/EIR**

To Whom It May Concern:

This letter represents the comments of Save San Francisco Bay Association regarding the above referenced document. In general, substantial progress has been made over the past decade to identify and reduce the impacts of dredging and disposal in San Francisco Bay. It is essential that the DIES/DEIR both reflect this progress and point us towards long term solutions to dredging needs and related environmental impacts. Unfortunately, the DEIR/DEIS falls far short of meeting this goal and of meeting the requirements of CEQA and NEPA. Therefore, we have concluded that a revised DEIS/DEIR should be released before the document is finalized. Our specific concerns regarding the adequacy of this document are outlined below. 1

1. The document does not adequately address the impacts of dredging and in-Bay disposal. The document discusses some impacts from in-Bay dredging and disposal practices. The document (6.1.1.2) indicates that, as a result of successive dumping at Alcatraz, "initial disposal plumes may not always fully dissipate between disposal events, so that some cumulative degradation of Central Bay water quality could be expected." However, the document does not present an analysis of the significance of these effects or their impacts on wildlife and fisheries. The section on benthic habitat (6.1.2.2) contains general statements, but inadequate data regarding the impacts to the benthic community, particularly rocky habitat, which fishermen have observed for years. The document contains little data regarding Central Bay fishing success trends and how such trends may be tied to dredging. The document also does not discuss the full range of resident and migratory fish which could be affected by in-Bay disposal. 2

2. The document fails to evaluate alternatives to reduce dredging needs through coordination or consolidation of port facilities. The Seaport Plan 3

3 produced by the Bay Conservation and Development Commission discusses future trends in Bay Area ports. We understand that some ports are currently consolidating facilities on smaller sites. The use of new technology and improved transportation is reducing the on-shore needs for terminals. This could result in the reduction of dredging needs because facilities could be located closer together, along a shorter dredged channel closer to deep water, rather than stretched out along a longer channel. Further, some port facilities may consolidate or increase their coordination within the planning horizon of the LTMS. These options to reduce dredging needs should be evaluated in the document.

4 **3. The document fails to evaluate the need to continue dredging Bay facilities, particularly closing military bases.** Table 3.1-1. includes a range of projected annual maintenance dredging needs from 3.2 to 4.9 million cubic yards. We believe that several trends could result in significantly lower dredging needs. In particular, converted military bases could result in significant reductions in dredging. Conversion may result in lower needs through allowing for reduction in the depth, width, length or configuration of channels. Some facilities may cease to be dredged altogether. Some Bay Area facilities may no longer meet the cost/benefit requirements for dredging projects.

Given these dramatic changes, the Corps should revisit the cost/benefit ratios for channels in the Bay Area to determine if some channels should be closed or reduced in size. Federal movement towards cost sharing, decreased occupancy in Bay Area marinas and other trends could further reduce dredging needs. Sections 2.6.1 and 5.1.1.3 discuss a case by case review process which does not adequately address this issue. This issue should be addressed by this document as well as the long overdue Composite EIS for Maintenance Dredging refferred to in Section 5.1.1.3.

5 **4. The document fails to select a single disposal strategy.** The document discusses moving towards alternative 3 over an unspecified period of time (1.8 and 1.9). If this problem is not remedied before the document is finalized, the lack of a clear preferred alternative and the absense of a strategy to phase into that strategy would result in great confusion. Unless clarified, it is almost unavoidable that different LTMS agencies and interest groups would develop different assumptions and positions regarding which alternative is in effect and how a transition should be phased in. The result could be confusion, increased uncertainty or an unacceptable continuation of the status quo. The discussion of phasing should also include guarantees to assure that changes will in fact be implemented. Finally, the document should provide for regular public evaluations of the implementation of the selected alternative.

6 **5. The document overstates the regulatory certainty of the no-action alternative.** The document indicates several changes in dredging practices in the past few years and states that "these events reflect a substantially more predictable regulatory environment than was the case during the days of "mudlock" in the late 1980's" (6.2.2.1). It is certainly true that there is greater certainty now than a decade ago. However, some of that certainty is based on

expectations that the LTMS will move us towards a more acceptable long term strategy. The current certainty is, thus, in part the product of patience as the long term strategy is developed. 6

For example, the McAteer Petris Act requires Bay fill to be minimized. While the LTMS is investigating alternatives which would reduce in-Bay disposal, it can be argued that the Act's requirements are being met. However, were the LTMS to select the no-action alternative, dredgers would shortly find themselves in violation of the Act. Thus, if the LTMS were to fail to produce dramatic changes in current practices, the no-action alternative would lead to a significantly less certain regulatory environment in the future.

6. The document fails to adequately reveal the costs of the no-action alternative. As a result of the increasing uncertainty which would result from the no-action alternative as described above, the document should be modified to reflect the increasing economic costs which would result in the future from the no-action alternative. 7

7. The document fails to adequately analyze the costs and benefits of alternative disposal practices. The document does not discuss the economic benefits associated with beneficial re-use of dredged materials (see related comments below regarding WRDA). The document also does not discuss the costs of various disposal options in the context of the economic benefits of the maritime economy to the Bay Area region. The increased costs which might be associated with some alternative strategies should be evaluated as a marginal cost to the entire maritime industry. 8

8. The document does not comply with the requirements of the Water Resources Development Act regarding cost/benefit analysis. WRDA states in part that: 9

> Enhancing national economic development (including benefits to particular regions...), the quality of the total environment (including preservation and enhancement of the environment), the well being of the people of the United States, ... shall be addressed in the formation and evaluation of water resources projects to be carried out by the [Corps], and the associated costs and benefits, both quantifiable and unquantifiable, shall be displayed in the benefits and costs of such projects. (33 U.S.C. 2281, emphasis added)

The document does not reveal the quantifiable and unquantifiable benefits and costs of all alternative, particularly with respect to natural resources. Benefits from fisheries restoration, improved water quality, enhancement of endangered species habitat and other natural values all have associated economic benefits. These benefits should be presented in the document.

10 **9. The document does not comply with the requirements of the Water Resources Development Act regarding wetlands restoration and the selection of a preferred alternative.** WRDA states in part that:

> The Secretary [of Defense] shall include environmental protection as one of the primary missions of the Corps of Engineers in planning, designing, constructing, operation, and maintaining water resources development projects. (33 U.S.C. 2316);
>
> (a) There is established, as part of the [Corps] water resources development program ... a long-term goal to increase the quality and quantity of the Nation's wetlands, defined by acreage and function. (33 U.S.C. 2317); and
>
> In the evaluation by the [Corps] of benefits and costs of a water project, the benefits attributable to measures included in a project for the purposes of environmental quality including improvement of the environment and fish and wildlife enhancement, shall be deemed to be at least equal to the costs of such measures. (33 U.S.C. 2284)

The Association believes that these requirements should lead to the selection of an alternative disposal strategy (as discussed in 1.8) which maximizes environmental benefits, such as a modified alternative 3.

11 **10. The discussion of aquatic habitats of the San Francisco Estuary (4.3.1.4) does not list seasonal wetlands or discuss their value.** These values should be listed and discussed here, as they are in figure 4.4-1. and in section 4.4.2.1.

12 **11. The document is extremely inadequate with respect to addressing the values of and possible impacts to seasonal wetlands.**

12a A. Need for Planning: The restoration of tidal and seasonal wetland acreage and values are essential to the long term health of the estuary. The use of some clean dredged material may be compatible with meeting this need. However, the use of such material should be biologically driven, and not driven by the needs of the dredging community. There are, around the Bay and around the nation, many examples of "restoration" projects which failed because they were designed to maximize disposal rather than to maximize environmental benefits.

The Association agrees that a plan is needed to provide a context within which it will be possible to evaluate the need for beneficial re-use of clean dredged materials as part of an overall restoration strategy. We are hopeful that the processes cited (5.1.2.1) will assist in meeting this need. The Association is also undertaking a major planning effort, the Partnership for the San Pablo Baylands, which may be helpful in meeting this need in the North Bay. This project should be listed here as well.

B. Mitigation: The document correctly indicates that the conversion of seasonal wetlands to tidal marshes has the potential to result in significant environmental impacts (4.4.4.1 and 8.3.1). However, the document fails to properly apply the principles of mitigation to this issue, including, in order of priority, avoidance, minimization and compensation. The document does not discuss criteria or strategies to select appropriate restoration sites which would avoid impacts to seasonal wetlands and other habitat values, how design could minimize impacts, or what compensation might be required for unavoidable impacts. The planning efforts referenced (5.1.2.1.), if successful, will be of help in meeting these needs. However, this document should lay out a policy framework requiring the full protection of seasonal wetland values through the mitigation approach described above. 12b

C. Restoration Implementation: In addition, the document should discuss how implementation of a restoration strategy which might include dredging re-use should be phased to assure that the restoration of one habitat, such as tidal wetlands, does not proceed far more rapidly than that of another habitat, such as seasonal wetlands. Such assurances are needed to guarantee that the complete plan will be implemented and to assure that the full range of habitat needs are met as the plan is implemented. 12c

D. Habitat "Tradeoffs": The document states that "some degree of habitat tradeoff would be inevitable with almost any habitat restoration project using dredged material. Decisions need to be made about the relative values of existing habitat types (such as seasonal wetlands)... These decisions...must be made on a case-by-case basis." (6.1.2.3). We disagree. Restoration planning will almost certainly find that the restoration of the Estuary will require increasing both tidal and seasonal wetland acreage and values. A well designed restoration plan can make this possible without a habitat tradeoff on a regional level. Finally, the interrelationships among different wetland types make it impossible to reach any scientific finding that any particular Bay wetland habitat type is more valuable than another. 12d

12. Table 5.2-3. incorrectly lists habitat conversation as a mitigation measure rather than a potential impact. 13

13. The document does not adequately address the possible impacts of the disposal of NUAD materials in wetlands. This approach to the contained disposal of contaminated materials is unproven and has the potential to result in significant adverse impacts which could be extremely difficult to remedy. These possible impacts and alternatives to remedy any such impacts should be thoroughly discussed. For example, if contained material should be exposed in the Bay or in a wetland, how would this contamination be eliminated? Where have such programs been undertaken? With what results? 14

15 **14. The document does not substantiate contentions regarding the 404(b)(1) guidelines.** The document states that the 404(b)(1) guidelines interfere with habitat restoration. However, no documentation is presented. We believe that 404(b)(1) guidelines should apply to habitat restoration projects, to protect existing values and to encourage the selection of appropriate restoration sites (see comment 11B above).

16 **15. The document does not contain an adequate discussion of methods to reduce the contamination of Bay sediments.** One major problem associated with dredging and disposal is the contamination of Bay sediments. An adequate program to clean up and prevent sediment contamination is essential to a successful long term dredging strategy. The document cites the Bay Protection and Toxic Clean Up Program (BPTC) as central to efforts to clean up contamination in Bay sediment (3.2.3.3). However, the BPTC has not met its legislatively mandated deadline to develop ranking criteria. It has developed no clean up plans and is not authorized to implement clean up plans. Bay Area dischargers have also attacked the program's funding and other elements.

The document should discuss how this program can be made more effective or, in the alternative, if the BPTC fails to meet the need identified in the document, what other strategies could adequately clean up and prevent sediment contamination.

17 **16. The document also does not discuss the possible in-Bay and ocean impacts of current proposals to weaken sediment testing protocols.** (5.1.1.1)

18 **17. The document does not adequately distinguish uplands and wetlands disposal.** Alternative 3 does not adequately distinguish between wetlands restoration and upland disposal and re-use in terms of benefits, impacts, feasibility and availability of sites. We believe that significant upland and wetland restoration disposal options may exist. However, these alternatives have dramatically different costs, impacts, availability and feasibility.

19 **18. The document ignores the possibility of using clean dredged materials to restore habitat in the Delta.** Many diked areas in the Delta are severely subsided and may lose their viability as farm land within the LTMS planning horizon. The CALFED process is currently evaluating options to restore extensive areas of habitat, particularly tidal habitat, in the Delta. One major obstacle to such restoration is the depth of potential restoration sites and the lack of adequate material to raise bottom elevations. The document does not discuss the possibility that clean material from the Bay could meet this need.

Some agencies have cited concerns regarding the salinity of Bay sediment and how such material could exacerbate existing Delta salinity problems. These salinity issues may or may not be insurmountable. The document, however, does not attempt to identify concerns regarding such use in the Delta or how